IMS

January 29, 1995

Brewster Kahle
WAIS, Inc.
1040 Noel Drive
Menlo Park, CA 94025

Dear Brewster:

I'm writing to thank you for the generous donation WAIS, Inc. made to the Internet Multicasting Service in 1994. Your WAIS engine is a key part of our effort to put government databases on-line!

You'll find enclosed excerpts from the press coverage of the Internet Multicasting Service over the last year or so. As you can see, we continue to get great press! More importantly, we're gaining a substantial audience on the Internet. Our North.Pole.Org pages, for example, received 1.2 million WWW hits from 64 countries in a little over 30 days. We're distributing about 10,000 SEC documents per day, 5,000 Patent documents per day, and our WWW server continues to grow in popularity with features such as the Red Sage, the Ballad of Ned Ludd, and our various radio archives.

On January 4, 1995, we turned on a 24 hr/day feed of News and Information on the Multicast Backbone and are sending out every word of the U.S. House and Senate floors both to the net and onto disk for later retrieval on an audio-on-demand server. Our government database effort will increase substantially in 1995, adding all U.S. Patents and Trademarks to our system.

This year will also see intense activity as we prepare for the 1996 Internet World's Fair. Along with Dr. Vint Cerf, Dr. Eric Schmidt, Dr. Marshall Rose, and Mike Millikin, we are organizing this "World's Fair for the Information Age" for 1996 as a true distributed World's Fair. Our hope is to put a T3 line around the world for the year, creating a public park for the global village. The World's Fair will be announced in March at INTEROP Las Vegas and we're looking forward to a successful rollout.

Thanks again for your generous support in 1994!

Sincerely,

Carl Malamud

Carl Malamud
President

SPONSORS

Sun Microsystems
MCI
O'Reilly & Associates
Softbank/Interop
RR Donnelley Financial
UUNET Technologies
MFS Datanet
Cisco Systems
Persoft
Harper Collins
Tadpole Technology
Monitor Radio
WAIS Inc.

THE INTERNET MULTICASTING SERVICE

SUITE 1155 • THE NATIONAL PRESS BUILDING • WASHINGTON, D.C. 20045
TEL: (202) 628-2044 • FAX: (202) 628-2042 • EMAIL: Carl@Radio.COM

SCIENCE
COMPUTERS

Superhighway Routed Through Capitol Hill

Network Plans to Deliver Sound Bites as Bytes

By John Schwartz
Washington Post Staff Writer

You read about it, but you missed the broadcast on C-SPAN. You want to hear Sen. Alfonse M. D'Amato (R-N.Y.) singing "E-I-E-I-O" on the Senate floor.

Today, you'll just have to wait for some news program to dredge up the clip for the next D'Amato profile.

But before long, if Carl Malamud has his way, you'll be able to suck that sound bite—or anything that happens on the floor of either chamber—into your computer directly from the Internet, and play it back whenever you like. You'll also be able to grab related materials—from photos to charts to reports—stored elsewhere on the Internet and linked to the segment you requested.

A Cyberspace Station

Malamud is very well connected, though not in the typical Washington sense of the word. He maintains a super-high-speed link to the Internet, the global network of computer networks, and has used those connections to put the first radio station in cyberspace on the air.

For more than a year, Malamud, 35, and a handful of part-time enthusiasts have been broadcasting two to three hours of digital programming daily via his Internet Multicasting Service (IMS). Technofans with sufficiently speedy Internet connections—and the right sound hardware and software—can tap into a weekly live audio feed for news and information about public affairs, science and technology. (Malamud named one of the features, a weekly interview, "Geek of the Week.") Most listeners, with less zippy on-line links, "download" bits of the programming into their computers for later listening.

Gavel-to-Gavel Coverage

Last week, Malamud announced a new venture that plans to take the appearance sometime next year of gavel-to-gavel audio coverage of the workings of the House and Senate via computer.

Why would anyone devote his life to turning the Internet, a key part of the high-tech future, into radio, a symbol of the static-filled past? And why would anyone want to use all of the awesome technology humming around us for a version of C-SPAN—without pictures, yet?
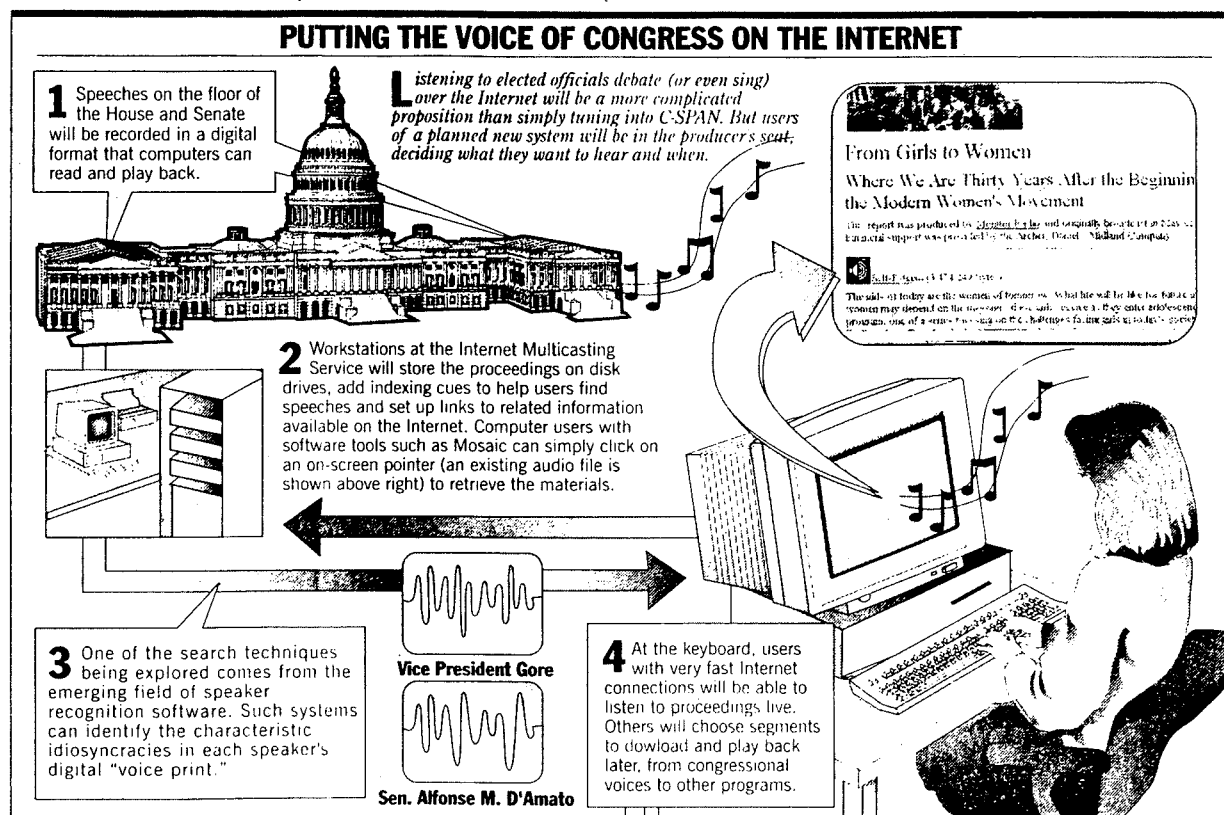
Because it's harder than it sounds. Although electronic text messages blink across the country in mere nano-moments, sound is a data hog. Translating sound into the 1s and 0s that can be interpreted by computers requires 30 megabytes of storage space for every digitally recorded hour—a chunk of the capacity of many home computers. Any semblance of a live broadcast also requires an Internet connection that shuttles data at rates of 64,000 bits per second—several times faster than most mainstream modems for personal computers can handle. Downloading programs at lower speeds for later listening can take hours of precious connect time.

Listening at the Office

Nonetheless, Malamud maintains that his programming reaches more than 100,000 people in 30 countries. Many fans listen in at their offices, because high-speed Internet links and internal computer networks are becoming *de rigueur* for businesses that send and receive large amounts of information on-line. "We're not CNN, but we're a lot younger than CNN," Malamud said.

Computer systems of the sort Malamud has in mind promise to bring new capabilities that conventional radio and television can't touch. Today's TV networks give you programs when they choose to broadcast them. But computer communications allow users to grab the broadcast at their convenience, or search and play back a specific portion of a broadcast that interests them.

In the planned project, congres-

path to the Internet. Sounds recorded at the House and Senate galleries will be beamed to IMS's Capitol Hill studio. After turning the sound into a digital data stream, IMS will shoot it over a high-speed line to studios at the National Press Building, where the information will simultaneously be stored on a massive set of hard disk drives and go out live over the Internet feed.

An Archive Service

The Internet Multicasting Service (for general information, send an Internet message to info@radio.com) won't just be broadcasting government proceedings live, though.

With its immense data storage systems—donated, like much of the computer equipment, by workstation mavens Sun Microsystems—the nonprofit IMS plans to archive the year's proceedings for delivery to anyone who has a hankering to listen to, say, what House Minority

about last Tuesday on the floor.

'Speaker Recognition'

One of the hottest aspects of the "Congressional Memory Project," however, is the software Malamud is planning to use to search the vast data archive. Most users will simply order up sound bytes by time and date. IMS plans to create a rough index of proceedings based on the Congressional Record, which is also available on-line.

Going a step further, Malamud hopes to implement still-experimental "speaker recognition" software that detects and stores the idiosyncratic patterns of sound in people's voices. Once those telltale characteristics are determined, a large audio database can be searched for matching patterns. Thus users of the archive could simply request any member's speeches on a certain date.

Because such software isn't a

depending on speaker recognition as a magic bullet," Malamud said.

Here's how the Congressional Memory Project is expected to work in practice: You're sitting at your computer (or, at least, the next computer on your wish list) and navigate your way to IMS using graphical "browsing" software such as Mosaic. Your screen fills with a page of information that contains text describing the service and several on-screen icons. To hear House proceedings live, click one icon. To hear the Senate, click another. Another icon will lead to the archive. Some of the text will be highlighted: Clicking on it will activate links to other material, which might include text of bills under debate, government reports and other documents, as well as pictures and illustrations stored on computers around the globe.

Plans for Expansion

Along with the new channels of government coverage, Malamud has

Radio programming, having signed agreements with Monitor Radio, Radio France International and other providers. Malamud is also working with the Kennedy Center to broadcast the center's educational programs, lectures and performances for youth.

Not all of Malamud's ventures are multimedia. The EDGAR text database of filings to the Securities and Exchange Commission is available free via the Internet thanks to the Internet Multicasting Service, the New York University Stern School of Business and grants from the National Science Foundation. Malamud has also put patent materials on-line.

By working out the kinks of sending and receiving multimedia programming, Malamud believes he is showing the way for future information superhighway services such as interactive television. "The cable companies and telcos [telephone companies] think 500 channels means home shopping and video on demand. I think we're what the face of those 500 channels

PUTTING THE VOICE OF CONGRESS ON THE INTERNET

1 Speeches on the floor of the House and Senate will be recorded in a digital format that computers can read and play back.

Listening to elected officials debate (or even sing) over the Internet will be a more complicated proposition than simply tuning into C-SPAN. But users of a planned new system will be in the producer's seat, deciding what they want to hear and when.

From Girls to Women
Where We Are Thirty Years After the Beginning of the Modern Women's Movement

2 Workstations at the Internet Multicasting Service will store the proceedings on disk drives, add indexing cues to help users find speeches and set up links to related information available on the Internet. Computer users with software tools such as Mosaic can simply click on an on-screen pointer (an existing audio file is shown above right) to retrieve the materials.

3 One of the search techniques being explored comes from the emerging field of speaker recognition software. Such systems can identify the characteristic idiosyncracies in each speaker's digital "voice print."

Vice President Gore

Sen. Alfonse M. D'Amato

4 At the keyboard, users with very fast Internet connections will be able to listen to proceedings live. Others will choose segments to dowload and play back later, from congressional voices to other programs.

Carl Malamud

has made the nonprofit

Internet

Multicasting

Service

the first

round-the-clock

'cyberstation' on

the Internet

KAREN T. BORCHERS — MERCURY NEWS

Agent Change

Multicasting becomes a hit by distributing Rolling Stones concert

BY DAVID BANK
Mercury News Staff Writer

FIRST came e-mail, then the World Wide Web.

Next up is multicasting, which really will make the Net rock and roll.

It was the 20-minute Rolling Stones concert over the Internet's multicast backbone, or Mbone, that brought widespread attention to it last November.

"Now a lot of people are trying to figure out how to get their hands on it and turn it commercial," said Stephan Fitch, president of Thinking Pictures, the New Jersey company that produced the Stones event.

Multicasting is a method for distributing live programming over the Internet. The programming can take many forms: video, audio, text or "whiteboards" — in essence electronic chalkboards that any number of users at different sites can scribble to simultaneously. Unlike traditional television or telephone service, multicasting connects groups with groups. Every viewer also can be a transmitter.

Multicasting generally requires high-capacity network connections that are still mostly found only in corporate or university settings. But the increasing home use of integrated services digital network, or ISDN, lines and the prospect of on-line access via cable means that multicasting may soon become a popular medium.

Because digital video and audio data consists of millions of bits of information per second, the developers of multicasting have established a reservation system for events — such as the Stones concert — to avoid overloading the Mbone. The growth in the number of smaller networks connected to the Mbone is doubling every seven months, a faster growth rate than the Internet itself.

"It's still an experimental service," said Steve Deering, the researcher at Xerox's Palo

'Now a lot of

people are

trying to figure

out how to get

their hands on

it and turn it

commercial.'

— *Stephan Fitch,*
president
of Thinking Pictures,
the New Jersey
company that
produced the Stones
event.

BY DAVID BANK
Mercury News Staff Writer

WHEN Rep. Newt Gingrich took over as Speaker of the House on Wednesday, Carl Malamud helped carry Gingrich's message to the people.

More precisely, to 12 people.

That was the size of the audience when Malamud's Internet Multicasting Service launched gavel-to-gavel coverage of floor debate in the House of Representatives and the Senate over the worldwide Internet computer network.

Malamud's audience was limited because the live audio transmission requires high-capacity communication lines that are not yet available to most home computer users.

But like all of Malamud's efforts, the Congressional Memory Project is a pilot for something bigger, much bigger.

Congress itself is making texts of bills and speeches available through Thomas, its new site on the Internet. Malamud is going a step further, serving up live and pre-recorded audio files.

The Internet Multicasting Service has become

His dream is to create public spaces in electronic world

■ MALAMUD
from Page 1E

programming and public affairs in addition to the proceedings of the House and Senate.

Malamud is taking technologies developed in research labs and putting them to popular use to show the Internet's potential once homes are equipped with affordable, high-speed lines.

To awaken people to the changes he sees ahead, Malamud sometimes inserts short audio clips into on-line sessions with his favorite slogan: "Adapt or die!"

"He is no different from (CBS founder) Bill Paley or Edward R. Murrow in creating the new cyberspace model," said Eric Schmidt, chief technology officer at Sun Microsystems Inc., which has supported many of Malamud's projects. "He sees himself as an information entrepreneur and a change agent."

Unlike other entrepreneurs, however, Malamud, 35, is not looking to cash in on the Internet's explosive growth. He ran up more than $40,000 in credit card debt to establish the Internet Multicasting Service as a non-profit corporation in 1993 and says he has turned away offers of millions of dollars from venture capital investors. He pays himself $6,000 per month.

Non-profit status, he said, lets him move quickly on projects, cut deals with both government agencies and private corporations, and, most importantly, pursue his interests without worrying about turning a profit.

"The fun work is before there's money in it, because it's never been done," he said. "If I wanted to make money, I'd go work for a computer company. I felt I had a vision of what the system ought to look like that I felt others didn't share."

Malamud's vision is of an electronic community — cyberspace — that includes more than shopping malls and movies-on-demand and virtual rooms for idle gossip. The Internet Multicasting Service is trying to construct public spaces in the electronic world — free concerts, public libraries, open government.

Malamud constructs those sites from his cramped offices in the National Press Club building in Washington D.C., which is jammed with Sun workstations, routers from Cisco Systems Inc., audio sound boards and huge computer servers that store billions of bits of data. He's well-wired, with a high-speed T-1 line directly to the Internet. Networking wizards from around the world drop by to help; Malamud has commitments for the coming year of three days of volunteer time from a dozen top-flight researchers.

"Carl has spent two or three years doing something that nobody else has been crazy enough to do and that is to cajole lots of equipment and money out of these corporations," said Simon Hackett, who spends two-thirds of his time running his networking company in Adelaide, Australia, and the rest roving the world having fun, particularly with Malamud.

Equipment donated

Companies like Sun, MCI, O'Reilly & Associates and the publishing giant R.R. Donnelley & Sons Co., have each put up at least $100,000 in cash and even more in donated equipment and services. Last year, Malamud raised about $650,000. This year, he figures he'll collect more than $900,000.

The companies hand over the money in return for access to his ideas, his research findings and a piece of the publicity he generates with "cheap stunts" that demonstrate the Internet's versa-

"He thinks in such weird terms," said Lance Boxer, vice president for data services for MCI, which is making a major push into the Internet market. "It's the kind of out-of-the-box thinking MCI needs right now.

"He's got ideas about how to take this thing called Internet, which was not a profitable business, and make it into something we could sell."

Resources helpful

The resources allow Malamud to quickly put many of his endless supply of ideas into practice. For him, engineering glitches and bureaucratic obstacles are simply different forms of problems to be solved.

When he found out that the Securities and Exchange Commission was paying a private information company to maintain its electronic data base and then paying again to use the data base, he offered to solve the problem for a fraction of the cost. That led to a two-year experimental project, funded by the National Science Foundation to make the Edgar data base available over the Internet.

That put him in competition with private information providers like Mead Data Central, which holds the government contract for the information.

"On Edgar, it's unlikely it would have happened without him," said Jamie Love, director of the Taxpayer Assets Project, a Ralph Nader spin-off focused on securing public access to government information sources. "He's done more than anybody in the executive branch to prove the value of government information."

The next project of Malamud's "Information Highway Beautification Fund" was to be the huge data base from the U.S. Patent and Trademark Office. But the effort recently ran into resistance from patent commissioners who again fear free distribution will undercut those companies who sell the information for a fee. That attitude brings only a sneer from Malamud.

"They are more worried about their sweetheart relationships with government contractors than they are with their public duty," he said. "They feel our activities threaten their friends. I call that improper, at best."

Launches alternative

He launched an alternative "telephone company" that uses the Internet to send faxes around the world, virtually for free. The idea came to him when he realized a telephone number could be expressed as an e-mail address. That makes it possible to send fax messages as electronic mail, which incur no long-distance charges. When the message reaches a computer near its destination, the computer makes a local call to the receiving fax machine.

At Christmas, Malamud produced the first live karaoke performance of Handel's "Messiah," sending the annual Kennedy Center performance over the Internet with sing-along lyrics highlighted in red.

"He's making the technology do things we never expected," said Steve Deering, the researcher at Xerox's Palo Alto Research Center who developed the protocols for multicasting — a way to send audio and video over the Internet — as a tool for researchers.

"We don't have the imagination to go make these things happen, or the drive," Deering said. "He does. He doesn't consider

> 'The fun work is before there's money in it, because it's never been done. If I wanted to make money, I'd go work for a computer company.'
>
> — *Carl Malamud*

anything to be too much of a hassle."

Malamud was bred to solve science problems. His father was a founding scientist at Fermi Lab, the advanced particle physics laboratory at the University of Chicago, and his mother holds a doctorate in invertebrate physiology.

But he hasn't been able to shake his lifelong obsession with public policy. At 17, he managed a losing campaign for a Democratic state senate candidate in a Republican stronghold in a nearby Illinois suburb.

His computer knowledge is self-taught. As a Ph.D. candidate at Indiana University, he was supposed to be teaching undergraduate economics. But he complained so much about the campus computer center that a system operator told him to put up or shut up.

Consulting background

A decade of consulting for large computer companies and government agencies such as the Federal Reserve and the Pentagon taught him that simple access to information can change the course of technological development. The success of the Internet, he discovered, could be traced to something as simple as free on-line access to the technical standards for the protocols. Rival standards withered because college students in computer labs could not get at the tightly held and expensive documentation.

That led to his other efforts to free other caches of government information and make them available through commonly used Internet features such as e-mail, file transfer protocols (FTP) — which allows users to get files, such as shareware from remote locations — and the World Wide Web.

But mostly he tries to have fun (his definition: an all-night effort

to wire up a network for a trade show demonstration, for example) and stir up trouble. He once persuaded a publisher to give him $45,000 to go around the world three times in six months exploring the still-nascent Internet.

Indeed, his current multicasting efforts grew out of his desire to start a magazine to tweak the sensibilities of the computer industry and tout the potential of the Internet. But he found it would cost millions of dollars to publish and he feared being beholden to advertisers.

"Then the idea came. Let's use the Net," he said.

That led to "Geek of the Week," a weekly half-hour interview that computer users were able to download and play back on their own machines. The point was partly to distribute the information and partly to understand the new distribution technology itself.

Radio show on Internet

The reaction at the time was, "What, a radio show on the Internet?" Two years later, the show has become a station that carries weekly luncheons from the National Press Club, programming from National Public Radio, a 24-hour music channel and now, the House and the Senate.

It's still a work in progress. For example, users will be able to recall snippets of legislative action by electronically searching the text of the Congressional Record for the desired subject and then ordering the audio files of the proceedings — a kind of Congress-on-demand that C-SPAN is not able to offer.

"This method of communicating with people is going to be major media," Malamud said. "Eventually, we're going to have audiences of millions of people. This will be an important part of people's lives."

IF YOU'RE INTERESTED

To reach the Internet Multicasting Service, point your World Wide Web browser to http://town.hall.org. For information about the Congressional Memory Project, use http://town.hall.org/radio/. If you don't have access to the Web, send e-mail to info@radio.com, which will generate an automatic response to frequently asked questions. Thomas, the new congressional information service on the Internet, can be reached at http://thomas.loc.gov.

Internet Radio Station Plans to Broadcast Around the Clock

By PETER H. LEWIS

The first radio station on the Internet, the worldwide computer network, announced plans last week to begin broadcasting 24 hours a day in January, including live gavel-to-gavel audio broadcasts from the House and Senate floors.

The Internet Multicasting Company of Washington, a nonprofit enterprise formed to develop new uses for computer-based communications, plans to send out a round-the-clock stream of bits and bytes to satisfy the seemingly insatiable appetite for data of subscribers to Internet, which has millions of users around the world. It will be, in essence, the digital equivalent of the C-Span cable network for people who would rather watch their computers than their television sets, except that unlike in conventional radio and television, all the broadcasts can be transmitted globally, stored, searched and augmented with text and picture files. In some cases, listeners would be able to retrieve biographical data about the speakers and send them comments by electronic mail.

The data stream will include highlights from performances at the Kennedy Center for the Performing Arts, speeches and debate from the floors of the House and Senate, broadcasts of luncheon speeches from the National Press Club, recordings of famous authors reading their works as well as the Internet subscribers' favorite radio talk show, "Geek of the Week."

In the Internet community, "geek" is a term of admiration for someone who has highly advanced technical skills.

"We are thinking of changing it to 'Wonk of the Week,' to reflect the impact of the Government on issues affecting our usual listeners," said Carl Malamud, the principal creator of "cyberstation" RTFM — Radio Technology for Mankind — which will carry the broadcasts.

Only a few thousand people worldwide have the high-speed network data capacity, or bandwidth, necessary to listen to live audio transmissions over their computers. But millions of Internet subscribers with standard personal computers and regular phone lines will be able to retrieve pieces of the audio from the repositories in RTFM's computer data bases, where billions of bytes of audio and text files are accumulating.

The technology needed to convert spoken sounds into computer bits, transfer them over special telephone lines and then package them in a way to be useful for listeners is still experimental. If all goes according to plan, a listener will eventually be able to type a request to "play Newt's speech on Tuesday on foreign policy," Mr. Malamud said. The computer, in theory, would be able to analyze voice patterns of the speakers and identify the portions emanating from Representative Newt Gingrich of Georgia, the House Republican whip.

"Imagine, they wouldn't be able to say, 'No, I never said that,' because it's all recorded," Mr. Malamud said, noting that some lawmakers edit the printed versions of their comments, which then appear in the Congressional Record.

Until the speaker-recognition software is stable enough to deploy, Congressional speeches will be indexed by date and time, Mr. Malamud said.

Highlights of the Congressional broadcasts, accompanied by supporting background material, will be assembled into a three-disk CD-ROM package that will be sold to libraries, schools and political advocacy groups, Mr. Malamud said.

CD-ROM, which stands for Compact Disk Read Only Memory, is a type of computer storage that is increasingly common on home computers.

Besides RTFM, Mr. Malamud's Internet Multicasting Company also makes available on the Internet the documents of the Securities and Exchange Commission, the data bases of United States patents and trademarks, and other Government troves of data. The effort is supported by grants from the National Science Foundation and private sponsors.

BUSINESS

MARKETS ◆ HIGH TECH ◆ ECONOMY

Cyberstation goes on the air in show-biz fashion

BY DAVID BANK
Mercury News Staff Writer

LAS VEGAS — The audio feeds are coming in from as far away as Australia and from as close as the rock band jamming in the ballroom of the Hilton Hotel. And they are all going out as bits of data over the global Internet computer network in the first show-biz spectacular for a new broadcast medium.

The four-day radio show that began Tuesday featured a live rock 'n' roll performance, a spinning Internet slot machine, a computer-controlled toaster and interviews with celebrities of the digital world, along with a running commentary by John Gage, Sun Microsystems Inc.'s chief scientist.

"It's broadcast in the broadest sense," Gage said, standing between two prefabricated octagonal pods that housed the bank of computers that make up the production studio. "We're sending worldwide through pathways that none of us know."

The experiment, which can reach millions worldwide, is neither radio nor television, but an attempt to use the power of computer networks to provide a new type of live interactive programming. For now, it's accessible only to those with high-speed data connections and powerful workstation computers.

The broadcasting station, dubbed a "cyberstation," was commissioned to kick off the huge Networld+Interop convention of computer network professionals that begins today.

But the creator of the cyberstation, veteran Internet innovator Carl Malamud, points out that television programming, too, originally was available only to a select few. But there would have been no incentive to buy television sets unless there was programming to receive. Those who became successful programmers, he said, were the visionaries who saw the potential of the new medium.

Cable companies, telephone companies and modem manufacturers are all rushing to provide high-speed connections to home computer users, and the speed of microprocessors is multiplying while prices fall.

"A year from now, when this becomes available to consumers, someone has to know how to be a cyberstation," Malamud said.

New type of programming hits Internet

■ CYBERSTATION

Malamud's not-for-profit Internet Multicasting Service in Washington has been broadcasting two channels of Internet radio for about a year, transmitting live speeches from the National Press Club and producing Geek of the Week interviews with industry figures.

Last year, the organization launched an alternative telephone company that uses the Internet to send faxes around the world, virtually free. The messages are sent as electronic mail, which incur no long-distance charges, until they reach a relay computer near their destination. That computer then sends the message to the receiving fax machine.

All of the efforts are intended to demonstrate the value of a general purpose information infrastructure, such as the Internet, Malamud said. In contrast, a cable television system is used almost exclusively to carry television programming.

Malamud said it is crucial that government policy-makers and corporate leaders heed the lessons of the Internet, which can be made to do whatever innovative hackers can make it do because there are a set of agreed-upon protocols.

"People can do things we never thought of before," he said.

Malamud is trying to squeeze as many new novelties as he can in the four days the cyberstation will operate. There will be a live broadcast by Secretary of Commerce Ron Brown and an interview with Ralph Nader. National Public Radio will broadcast its "TechNation" show from the studio.

Computer users with access to Mosaic, the software for browsing the Internet's World Wide Web, will be able to click the lever on the Internet Slot Machine. The prize for getting three red icons together: a $1,000 Internet tutorial.

Turning the Desktop PC Into a Talk Radio Medium

By JOHN MARKOFF
Special to The New York Times

SAN FRANCISCO, March 3 — Talk radio is coming to desktop computers.

Within a few weeks, a Virginia-based entrepreneur plans to begin broadcasting a weekly 30-minute radio talk show on Internet, the global computer network that links together more than 10 million scientists, academics, engineers and high-tech industry executives.

Listening to such a program via computer instead of a radio might seem merely a digital curiosity. But many computer scientists and telecommunications experts believe it signals the first step in a transformation in which national and even global computer networks will fiercely compete with — or even replace — traditional television and radio networks that broadcast over the air or transmit by cable.

Listen Now, Listen Later

Many desktop computers, including some of the less expensive models found in the home, now have speakers and software that permit sound effects. When the new program, to be called "Internet Talk Radio," make its debut, Internet users will be able to obtain it as a file of computer data, just as they might "download" from the network a research report, data about a scientific experiment or any of thousands of other data files.

Listeners with sufficiently sophisticated gear can listen to the program as it is transmitted or choose to store the data in their computers and play it later. Listeners with less sophisticated equipment can hear it only after the data have been received and stored. Either way, the program will be divided into segments, so those Internet users who wish can select only parts of the program listed in a menu — taking the book reviews, for instance, while passing up the week's news.

"We're not all going to start listening to radio on our computers yet," said Paul Saffo, a computer industry analyst at the Institute for the Future, Menlo Park, Calif. "But this is pregnant with possibilities. It's proof that the era of mass media is past."

For the 'Real Time' Crowd

Initially, the new digital radio program will be targeted at the programmers and technically minded researchers who spend their days sitting in front of advanced computers writing or manipulating software and who have the high-speed connections to Internet that permit listening to the program in "real time" as it is received, while continuing to do other tasks on the machine.

But the new multimedia technology is viewed as gradually having a much broader audience as computer networks evolve from primarily a means of carrying business or scientific data into a new digital medium that will increasingly compete with conventional media like television, radio and newspapers.

There are no technical reasons why a video version of Mr. Mala-

Talk Radio on Desktop Computers

mud's program could not be carried on Internet, except that some portions of the network do not currently have sufficient carrying capacity. Those limitations are likely to disappear, however, as more of the network links are upgraded to fiber-optic circuits under such efforts as Vice President Al Gore's "data superhighway."

"It's a brilliant idea," said Nicholas Negroponte, director of the Media Laboratory, a computer research center at the Massachusetts Institute of Technology. "All of these guys — newspapers, radio or television — are really in the same business. We've always thought video or audio or data are different businesses. But today, when you radiate bits, those bits don't have to have a specific medium attached to them."

Blending the power of the computer with conventional radio or television could create an intriguing new media that will give viewers or listeners more control over what they receive while allowing them to interact with the media in a manner now not possible. Conceiveably, any Internet user could create his own audio or video program and and make it available on the network, just as the creator of Internet Talk Radio plans.

'Random Access Radio'

The program is the brainchild of Carl Malamud, a 33-year-old economist and writer in Alexandria, Va., who helped pioneer a computer network for the board of governors of the Federal Reserve Board. Mr. Malamud is the author of a number of technical books on computer networks.

Attempting to capture the "feel" of popular radio programs such as National Public Radio's "All Things Considered," Mr. Malamud said he believed that he could successfully aim a commercially financed show at engineers and technically minded computer-network users by filling a gap left by the trade newspapers.

"I call this random access radio," he said. "Our listeners can start, stop, rewind, or otherwise control the operation of the radio station.".

The program will be aviable to network users in the United States, Europe and Japan.

Each weekly half-hour program, which will be taped and transmitted later, will be built around an interview with a person widely known in the computer network field — or, as Mr. Malamud said he was dubbing the section, the "Geek of the Week." He said the main feature would be accompanied by a number of smaller segments that would include computer network news, gossip, book reviews and even restaurant reviews sent in by users of the computer network.

"My view is that desktop broadcasting is an easy thing to do," he said.

A Presidential Feed

"Internet Talk Radio" is based on a series of emerging technologies being used experimentally by many Internet users. They have been recently experimenting with digital video conferencing, telephone calls and even music broadcasting over the computer network.

For example, during President Clinton's visit last week to the Silicon Valley computer maker Silicon Graphics Inc., a digitized version of the video feed of the event to the news media was simultaneously transmitted to employees so they could watch from their computer workstations. The same digital data stream was

also accessible to Internet users with hardware sufficient to receive it.

The data file comprising the entire half-hour program will require 15 million bytes of computer storage space, the equivalent of about 15 good-sized novels. Such a file, while a mere morsel for a powerful work station, would occupy a significant portion of most home computers' storage capacity.

Getting Started

Listening to the program as it is being transmitted requires a computer network capable of supporting a stream of data of 64,000 bits a second — a rate that is higher than conventional personal-computer modems but well within the reach of standard office computer networks, which can send data at speeds of up to 10 million bits a second. A less sophisticated computer with a modem that receives data at 2,400 bits a second would require almost 14 hours to receive the entire program. But more sophisticated and lower-cost technology expected to be on the market soon would make such broadcasts available on home computers.

"Internet Talk Radio" will be transmitted in an audio format that has become a standard in the world of high-powered work stations. For personal computers, assuming they are equipped to handle sound, various adapter products on the market would allow the program to be heard.

Mr. Malamud said that his files would initially contain only audio, but there is no limitation against adding additional computer instructions to expand the power of the digital audio.

Michael Geissinger for The New York Times

Carl Malamud, who has created Internet Talk Radio, radio programming distributed over a computer network as a digital audio data file.

Can a 'download' of Larry King's shows be far behind?

"I'm looking at equipment that lets me put signals that would do things like allow you to move to the beginning of the next question or the next time the speaker changes," he said. "Another possibility is to run multiple sound tracks for translations or annotations of an interview."

Mr. Negroponte said the rapid growth of the Internet was largely being ignored by the big players in publishing and broadcasting. Internet has expanded so quickly that even network officials cannot say with precision how many users there are. The best estimates indicate a global audience of more than 10 million computer users routinely exchange information and read electronic mail using the network.

"The big players are asleep at the wheel," Mr. Negroponte said. "This network is growing 15 percent each month. It's not just hackers any more."

TECHNOLOGY

Live From Vegas...
It's Talk Radio, TV,
Rock on the Internet

* * *

Computer Architect Malamud Embarks on First Full Day Of Multimedia Broadcast

By Jared Sandberg
Staff Reporter of The Wall Street Journal

NEW YORK — For more talk and less music, tune into your local . . . "cyberstation"?

Carl Malamud, computer-network architect and self-styled pioneer on the Internet, expects today to broadcast his first full day of radio-television programming over the global web of computers. Part public radio, part C-SPAN, the broadcast — "Radio Technology for *Manana*" — will include news, live interviews and rock music.

The Internet, which has 20 million users and counting as it transforms from geeky enclave into hip phenomenon, usually carries all manner of computer data and programs rather than over-the-air fare. But powerful workstations with high-speed hookups can receive information at eight times the speed of typical Internet links, letting them get audio and video broadcasts.

That amounts to a forerunner of the fabled information highway. Mr. Malamud, president of Internet Multicasting Service, an effort to take the Internet beyond data and into TV and radio, says he can reach only about 100,000 users now. But within a year, multimedia personal computers and network connections will be powerful enough to reach a far larger audience, he predicts.

For the past year, Mr. Malamud's Internet Talk Radio service has been offering canned, 30-minute interviews called "Geek of the Week," which even less-powerful PCs with "sound cards" can pluck from remote computers and download for a listen. The latest effort, by contrast, is live from Las Vegas, where a networking industry trade show began this week.

The broadcasts were to start last night with live music from a band called Tungsten Macaque. Today, Mr. Malamud planned to kick off the normal lineup of talking heads: He starts with a remote radio interview with Ralph Nader. Next is an audio portion of a news conference by U.S. Commerce Secretary Ron Brown to lay out the administration's view of the information highway.

Other highlights: an interview with Rep. Edward Markey, a Massachusetts Democrat, a video broadcast of the PBS show "Computer Chronicles," and a recording of Robert Frost reading "The Road Not Taken."

Virtual reality is in Vegas

☐ Computer-generated reality is among the latest technological advances at Networld + Interop.

By John G. Edwards
Review-Journal

A New Hampshire company has chosen the ultimate high-tech medium to sell its product at the Networld + Interop computer networking show in Las Vegas this week.

Cabletron Systems Inc. of Rochester, N.H., is using a "26-seat virtual reality theater" at Las Vegas Convention Center to demonstrate how a computer networking product works.

Virtual reality events are becoming a new way to advertise and promote products. Still another medium, computer radio broadcasts, were demonstrated nearby at Las Vegas Hilton Hotel as part of the convention.

Internet Multicasting Service, "the first radio station in cyberspace," carried interviews with Commerce Secretary Ron Brown and Rep. Edward Markey, D-Mass., from Washington.

"I'm extremely concerned about the possibility that we develop into a society of information haves and have-nots," Markey said.

John Gage, science office director of Sun Microsystems Laboratories Inc., said state utility regulators should force telephone companies to provide high-speed data transmission lines at low cost or no cost to schools. Students

Gary Thompson/Review-Journal

John Gage, center standing, an executive with Sun Microsystems Laboratories Inc., explains Internet Multicasting Service, a nonprofit radio station that broadcasts over the Internet international computer network, to a television crew. The broadcasts are part of Networld + Interop convention in Las Vegas this week.

need to be able to tap into Internet, the international computer network, from public schools, he said.

At the Cabletron exhibit, visitors spend about an hour each talking with sales agents, waiting in line and hearing a presentation before spending about four minutes in virtual reality.

They put on odd-shaped helmets that give them the eye-view of a "data packet" of information traveling

Please see CONVENTION/16E

New type of programming hits Internet

■ CYBERSTATION

from Page 12D

Malamud's not-for-profit Internet Multicasting Service in Washington has been broadcasting two channels of Internet radio for about a year, transmitting live speeches from the National Press Club and producing Geek of the Week interviews with industry figures.

Last year, the organization launched an alternative telephone company that uses the Internet to send faxes around the world, virtually free. The messages are sent as electronic mail, which incur no long-distance charges, until they reach a relay computer near their destination. That computer then sends the message to the receiving fax machine.

All of the efforts are intended to demonstrate the value of a general purpose information infrastructure, such as the Internet, Malamud said. In contrast, a cable television system is used almost exclusively to carry television programming.

Malamud said it is crucial that government policy-makers and corporate leaders heed the lessons of the Internet, which can be made to do whatever innovative hackers can make it do because there are a set of agreed-upon protocols.

"People can do things we never thought of before," he said.

Malamud is trying to squeeze as many new novelties as he can in the four days the cyberstation will operate. There will be a live broadcast by Secretary of Commerce Ron Brown and an interview with Ralph Nader. National

Public Radio will broadcast its "TechNation" show from the studio.

Computer users with access to Mosaic, the software for browsing the Internet's World Wide Web, will be able to click the lever on the Internet Slot Machine. The prize for getting three red icons together: a $1,000 Internet tutorial.

IF YOU'RE INTERESTED

The cyberstation will broadcast from Networld+Interop from 7 a.m. to 6:30 p.m. today and Thursday and from 7 a.m. to 4 p.m. Friday. For information, send e-mail to hype-request@media.org . On the World Wide Web, type http://www.media.org . The anonymous ftp address is ftp.media.org (use your user name as the password).

Worldwide Assemblies Are Possible Through New Computer Talk Station

Internet Multicasting Network Instantly Sends Words, Pictures and Sound to 20 Million People

BY DAVID BRISCOE
Associated Press

Call it the ultimate conference call.
President Clinton could one day sit at a White House microphone and computer, linked to thousands of people across the globe, each also sitting at a personal computer and able to talk back.

Welcome to Internet Talk Radio, the world of the cyberstation.

Into the future

Recently, Vice President Al Gore provided a peek at the futuristic communications network during a speech at the National Press Club. His words were sent instantaneously via computer around the world by the Internet Multicasting Service, operator of the only existing cyberstation.

The system can transmit typed words, pictures and sound back and forth through an ever-growing web of networks that links more than 20 million people at home, office and school computers around the world.

"We've turned every user into a radio station," says the Internet station's founder and manager, Carl Malamud, a computer network builder and author.

Malamud says he has about 100,000 users of his non-profit station and a potential for millions. Internet Talk Radio is financed by Sun Microsystems, O'Reilly & Associates, UUNET Technologies and other contributors.

His six-month-old interactive cyberstation, creating digital radio files, operates in "cyberspace," a word coined to describe computer communities of people in more than 150 countries who socialize, play games and do business online.

Computer hackers in Britain, Ger-

> "We've turned every user into a radio station."
>
> **Carl Malamud**

many, Japan, Israel and across the United States were listening to Gore on Dec. 21. More than 200 Internet users fired off electronic mail questions to the vice president, many while his speech was still under way.

With some enhancement, but still using today's technology, the questioners could have talked live over the National Press Club's public address system during a question and answer session. And there are even ways to keep everyone from talking at the same time and to allow a monitor to converse privately with members of the worldwide audience without interrupting the speaker.

Almost live

The primary appeal of Internet radio now is for computer engineers working to develop the technology. But huge talk-back audiences could quickly emerge as the cost of computer equipment declines and technology continues to improve.

In 1994, Malamud intends to file on his Internet system all National Press Club luncheon speeches, which include top U.S. officials, visiting heads of states and a wide range of world figures.

The station also will feature a recording of T. S. Eliot reading "The Wasteland" and hundreds of other excerpts from HarperCollins audio books, a regular talk show on computer topics called "Geek of the Week," a handful of public radio shows, and a Public Broadcasting System weekly TV program, "Computer Chronicles."

For a charge, any computer user with a modem can now hook into one of several services that tie into the Internet. To get Talk Radio's files to play through a home computer requires a sound card and speakers such as those that come with multimedia kits. *WBR*

He puts the 'info' in 'info superhighway'

3610

Carl Malamud is a leader in finding new ways to put data on the Net

Carl Malamud is a liberator of information. From an office in Washington, Malamud and his non-profit organization, Internet Multicasting Service, are using the Internet to put as much information and knowledge on the Internet as possible.

"We liberate data from the real world," Malamud said during a recent telephone interview.

Then he takes that information and puts it into the virtual world of the Internet.

While Malamud is not alone in distributing information by way of the global network of networks, he and his assistants are on the leading edge in finding new and different ways of providing it to people.

Malamud oversees Internet Town Hall and Internet Talk Radio.

The Town Hall offers a potpourri of government information, an Internet-to-fax service, a menu from a Washington restaurant and other tidbits.

SEC DATA

During the past year, Malamud, with the help of New York University and a grant from the National Science Foundation, has been downloading the daily treasure of corporate records filed electronically with the federal Securities and Exchange Commission and spreading it to Internet users.

Via electronic mail and by computer programs like gophers and the World Wide Web that can search the Internet for information, patient Net users can delve into megabytes of corporate information, from quarterly statements to insider trading reports.

Although the records are in a raw form, forcing users to sift through lengthy directories, and currently only available for this year, they are free. A commercial service charges exorbitant fees for the same information.

By the end of the year, the service may have more than 50 billion bytes of information stored from the SEC.

GOOD THINGS DON'T LAST

But Malamud already has announced that Internet Multicasting will pull the plug on the service at the end of 1995, when its grant runs out.

It is not that Malamud believes the service is unimportant. On the contrary, he believes the SEC or some organization should continue providing the data for free as a public service.

Unfortunately, SEC officials have expressed distrust and annoyance with Malamud's project, claiming it interferes with efforts to sell the SEC electronic records to for-profit companies, which would turn around and sell the information to individuals and companies.

Besides corporate records, the Internet service also has information on new patents, the Federal Reserve System and federal acquisition rules.

And the service also delivers e-mail via fax to those souls without Internet access but with a fax machine.

And, for the hungry Net surfer, Malamud has included the menu for an upscale Washington restaurant.

Internet Multicasting also has built a "cyberstation," called Internet Talk Radio, on the Net.

Half broadcast station, half computer, the cyberstation broadcasts audio from National Press Club luncheons, where the high, the mighty and the newsworthy speak and answer questions, and from computer conventions.

'GEEK OF THE WEEK'

Malamud's half-hourly "Geek of the Week" program has not made the Arbitron ratings yet, but thousands of people save and listen to his conversations with high-tech gurus.

JAMES CRAWLEY

"Radio is just a metaphor," Malamud said. "We're multimedia and multi-protocol, we're asynchronous — you can be interactive with it now and anytime in the future."

Audio is transmitted as computer files — an hour equals 30 megabytes — and is not recommended for the faint of heart or slow of modem speed. I tried to calculate the download time for a 14,400-bps modem, but my calculator doesn't handle such large numbers. I think it's nearly six hours.

But if you are hooked into a university or company network that allows for direct, high-speed transfers, the download could be a few minutes.

GIGABYTES, GIGABYTES

The service has 45 gigabytes of hard disks spinning at any moment. Those drives are fairly full, and Malamud cannot wait to soon push the button and crank up another 70 gigabytes of disk space, served by an awesome Sun workstation computer with a gigabyte random-access memory.

While Net masters know that the Internet makes anyone a publisher, "not everyone will be a famous publisher," Malamud said. "Content, plus how it's expressed, is important." His immediate goal is for the Multicasting Service to broadcast 24 hours a day, with more live coverage, more convention coverage and audio from foreign stations.

For the future, Malamud wants to build an online university on the Internet, using Talk Radio as a foundation. He already has 40 hours of computer tutorials that he plans to digitize for the Net.

"If we succeed," he said, "it will do what CNN did for the cable industry."

A LITTLE BIT

To find out more about Internet Multicasting Service, send electronic mail, with no subject or text, to info@radio.com. For information about obtaining SEC documents, send a similar message to mail@town.hall.org. For a how-to on the fax service, send e-mail to tpc-faq@town.hall.org.

You also can reach Internet Multicasting with the World Wide Web by pointing your browser at http://www.town.hall.org.

ANOTHER NET PROVIDER

San Diego has another local Internet provider. The new connection is via Data Transfer Group, which provides dial-up accounts using their interface or SLIP accounts, which provide wider access to the Net but require users to supply their own software. Personal accounts start at $18 per month. For more information, call 220-8601.

THE QUEST

Last issue's Quest to find the horde of nuclear weapons information at Leonard, Okla., was answered first by Stafford Rau, a previous winner. Rau discovered a listing of underground nuclear tests, with dates and locations, on the gopher computer at wealaka.okgeosurvey.gov. The Quest produced two responses, but no others. Come on folks, they are not that hard!

For this week, I'm interested in what times the comet will hit Jupiter tomorrow and Thursday. For a bonus, tell me where the comet's discoverers were working when they found the ill-fated comet. Send your answers and how you found them on the Net to me via e-mail and put "Quest" in the subject line.

James Crawley can be sent electronic mail by the Internet at crawley@sduniontrib.com.

commentary

St. Petersburg Times

Lifting every voice

■ Desktop broadcasting brings the power of the media to the individual.

By Carl Malamud

For 20 years, we have been hearing and reading about the global village, a futuristic vision of how we will live in a wired world with instantaneous communication. Over the last two years, something remarkable has happened: The global village has become a reality.

The core to this futuristic world is a network of computer networks called the Internet. Gradually, all the computers in the world are starting to get hooked up. Commercial networks like Prodigy or Compuserve or MCI Mail are

■ Carl Malamud, an economist and writer in Alexandria, Va., is the founder of Internet Talk Radio ■

starting to connect to high-speed data highways, a global interstate system for computer traffic.

The Internet started in the United States as a research experiment sponsored by the Defense Advance Research Projects Agency (DARPA) and the National Science Foundation. Gradually, this remarkable example of international cooperation grew into a network of 14-million people in 106 countries. The Internet is growing explosively, expanding at a rate of 15 to 20 percent per month.

At first, computer networks were used as an electronic version of the post office, a means of exchanging mail messages. These electronic mail messages soon became a vital necessity for those of us who lead our professional and personal lives on the Internet. It is not unusual for me to wake up in the morning and see messages from people in a half-dozen countries.

Please see INTERNET 6D

Electronic mail is a vital service on networks, but we are beginning to see a huge variety of other services. The Wide Area Information Service (WAIS), for example, is an on-line document library which you search by asking simple questions in English.

"Is there any poetry that talks about love around?" you might ask. WAIS would come back with a list of Shakespearean love sonnets. The location where the sonnets are stored is transparent to you: WAIS makes the world into your local library.

Recently, the Internet has taken a spurt forward. Under the leadership of people like then-Sen. Al Gore, bills passed Congress to expand the U.S. portion of the Internet, forming a national data superhighway. The Clinton-Gore administration has made this area one of its priorities, a way of beginning to get an electronic infrastructure to support business, education, and government into the next century.

The need for a national network infrastructure is underscored in recent proposals for a town hall, an electronic meeting place where government officials and other leaders can talk to the public (and where the public can make their views known).

Recently, that town hall has started to become a reality. With the help of many people in the engineering community, I've started Internet Talk Radio: a new medium for communications. We start with a radio metaphor because that metaphor is familiar.

Internet Talk Radio is simply a way of moving programs to your computer, where you play them. Any Macintosh and most other computers now have multimedia support: the ability to display art and photographs, to play sound, or to even play video movies.

Internet Talk Radio is at the crossroads of multimedia and the global Internet. Building on the research efforts of pioneers at places like Lawrence Berkeley Laboratories and Xerox PARC (Palo Alto Research Center), Internet Talk Radio combines the professional journalism of the classic media with the responsiveness and scope of the Internet.

We call this radio, but it is a different kind of radio. Think of a radio station which you can start or stop at will. You can rewind the program, or fast forward past the commercials. You can even change the order, listening to the restaurant review first instead of during the break.

Radio is just the start. Internet Talk Radio has the ability of being a truly live, interactive medium. Everyone of our listeners could participate in an interactive game show. Or, an international town hall could allow people to talk to our guests, to conduct instantaneous polls, or to distribute background information to those listeners who want to get an in-depth view of the network.

Already, video conferences are being held on the Internet, bringing people from 20 countries together in an electronic meeting room. Today, those videoconferences are used mostly by the technical community, but we want to see a day where ordinary citizens can walk up to their computer, see the president of the United States, and tell him what they think.

Desktop broadcasting brings the power of the media to the individual, allowing one person to express complex material using a variety of communications tools. Moving the Internet from plain text messages into multimedia is akin to the move from the telex to the telephone.

The Internet is a powerful force for democratic values and for an informed, responsive government. The Clinton/Gore proposals for an information infrastructure are laying the crucial building blocks for the next century, doing for our children what the builders of the railroads, the telephones, and the interstate highways did for us.

■ Carl Malamud may be reached on the Internet as carl@radio.com. ■

San Francisco Examiner
BUSINESS

:7.40
-2.22
).05%

Rudolf Solomon
has some wise
words for
would-be shoe
store owner:
Investigate be-
fore you invest
[D-2]

KSOL bridge stunt: Crazy like a fox?

In radio, any publicity is good publicity

By Carla Marinucci
OF THE EXAMINER STAFF

Maybe it was a horrendous mistake. But maybe, just maybe, it was the most brilliant publicity stunt of all time.

Radio station KSOL, "Wild 107," garnered the dubious distinction last week of creating an avalanche of hostility and ill will —

and a riot of front page stories — in what ranks as one of the biggest publicity stunts ever to hit the Bay Area.

By blocking tens of thousands of commuters on the Bay Bridge at the height of morning rush hour Wednesday for a parody of President Clinton's ill-timed haircut, the station's 26-year-old disc jockey, Mancow Muller, won himself a suspension — and a place in radio infamy.

ANALYSIS

In a competitive industry where ratings are lifeblood, and any news may be considered good news, marketing experts — and KSOL management — are left wondering whether what may be called "terrorist public relations" will spawn even wilder, more disruptive stunts in search of free publicity.

"It illustrates that this is a time where anyone with a Mac and fax can make news," says Joel Drucker, an Oakland-based marketing and communications expert. "It's like 'if you don't like the news, go

make some of your own.' Newsmaking is in the hands of people." And growing numbers of those people, he says, understand too well how to accomplish the mission.

More than one executive at competing area radio stations laments privately — and not for print — that KSOL's news reaped just what most stations crave with the megaevent: awareness, awareness, awareness.

"All those people who never heard of KSOL now know exactly

where it is on the dial," said one ruefully. "And you can expect at least some of them will tune it in to see what's happening there."

"I think that the stunt was inexcusable ... but a certain percentage of people may tune in just to see what the station is and to see what's what," says Jon Glodow, senior partner of San Francisco-based Glodow Coates & Nead, a marketing and public relations firm that has handled a variety of

---

'People can stop. People can fast-forward. This is random access radio.'

A world of data coming to your fingertips

Editor's note: Everyone knows about the wireless new gadgets that allow people to phone or fax their offices from remote locations. But what about using the same technology to make all sorts of vital information easily accessible to the masses? The second installment of the three-part series "Wiring The Planet" joins the engineers who are working to do just that

By Frank Bajak
ASSOCIATED PRESS

COLUMBUS, Ohio — The room is filled with 40-odd workstations, but most of the computer engineers are in a semicircle around a single terminal. Internet Talk Radio has hit the airwaves.

Well, sort of.

This isn't radio in any traditional sense. It's not being broadcast by any big radio stations just yet. But it has been sent around the world on the Internet, a rapidly expanding web of interconnected computer networks.

"The first radio show designed to be played on your computer," the announcer says. The engineers grin. The voice and a synthesized jingle come from a pair of midget speakers, but all eyes follow the modulated sound readout on a monitor.

This is digital radio, a bunch of professionally mixed audio files

AP/CHRIS KASSON
Carl Malamud, producer of Internet Talk Radio, was one of the computer heavy hitters who came to Columbus.

Inflation worries without grounds

Economists say a new spiral unlikely

By Vivian Marino
ASSOCIATED PRESS

NEW YORK — Inflation has once again sent jitters through the financial markets. But has it actually made its way to the supermarkets — or for that matter, the nation's dry cleaners, gasoline stations and restaurants?

Most economists aren't convinced.

"We've seen a bottoming out of inflation. (But) we're not in for a new inflationary spiral," said Sandra Shaber, a consumer economist for the Wefa Group, an economic forecasting firm in Bala Cynwyd, Pa.

Concerns about inflation heightened in May after the government reported a greater-than-expected rise in consumer and wholesale prices during April. That hurt stock and bond prices and drove up interest rates and prices for gold, which is seen as an inflation hedge.

Economists called the market reaction overblown, noting that bad weather was partly responsible for the higher prices, particularly with fruits and vegetables. They said little had changed in the economy to portend higher inflation.

"Basically, we're in a deflationary world," said A. Gary Shilling, who heads a New York economics firm bearing his name. "There's a recession in Europe, and Japan is mired in a decade of restructuring.

"The U.S. economy is dragging on; we're continuing to see big job eliminations. It's not an inflation-

World of data at your fingertips

that can be played by the synthesizers built into many desktop computers — just like the music and sound-effect files that enliven computer games.

But that's where the radio metaphor beings to blur.

"People can stop, people can fast-forward — this is random access radio," Carl Malamud says of his brainchild.

The 33-year-old writer and networking engineer has, at least initially, geared Internet Talk Radio toward computer network architects, nearly 800 of whom were in Columbus for a week-long Internet Engineering Task Force meeting.

The engineers, a supercharged species from 17 countries, have wired a Hyatt Regency with high-speed data links. Their designs must enable the big jump in scale to the networks of the future. And the tools they're developing must allow computer novices to easily browse the Internet's rich but elusive resources as one might the local library.

One topic is knowledge robots, the resource discovery tools of tomorrow that will be dispatched across networks with orders to bring back specified information or go buy or check the price on something.

Another is improving audio and video transport on the network.

A narrow interest group? Sure. But Internet Talk Radio inhabits a medium with enormous potential as audio and eventually full-motion video enter the personal computer market and more and more people hook up to computer networks from home or work.

Ambitious plans

Malamud has big plans. He already has sold the National Press Club on letting him "broadcast" its luncheons and has visions of holding truly interactive national town meeting the computer-shy easy access to the wealth of information the technically adept can extract. But plenty of robust navigation and information-grabbing tools already are available.

Wander through the computer room and you'll see the latest software packages get some rigorous testing from the best in the business.

At one workstation, Fred Whiteside is setting up his Boston company's new program that allows people to interact with the Internet via Microsoft's popular Windows operating system. Windows is in

millions of corporate and home computers, widely popular because of its relative ease of use.

At another terminal, a small group gathers around Tim Berners-Lee as he guides a reporter through his 2½-year-old software invention, World Wide Web. A dazzling research tool, it seeks out information by establishing a web of interconnections in a world of random resources.

The secret is hypertext, highlighted sections of text — or pictures themselves — that the user points to with a computer mouse and clicks on. That brings a new, more specific body of information onto the screen.

"The Web is a set of associations, and in a way the Web is a representation of mankind's knowledge," says Berners-Lee, a ruddy-cheeked Brit who has moved via the software into files at his workplace, the European Parti-

cle Physics Laboratory in Switzerland.

Global reach

"We're going halfway across the world and picking up stuff in less than a second," says the Oxford-trained Berners-Lee, 37, whose mind so races he often leaves sentences unfinished.

"I'm really interested in getting this into grade schools," he says.

Eight hours later, as midnight approaches, the computer room still is packed. But now the interaction is exclusively between human and computer.

Some 50 people are riveted to terminals, and no one is talking. There is only the low hum of computer power units and the muted click of keystrokes.

"These are the people that built the Internet," says Malamud, and this is no ordinary convention. "They come here to work."

The Internet has become such a labyrinthine jumble of networks that software tools to locate information are essential.
Some of the more widely used tools, and how they could be compared to similar services on the telephone system:

ARCHIE:
Created by two Montreal graduate students, archie searches public archives, telling you all the different places on the Internet where the files you seek can be found.

Telephone analogy: Operator assistance

GOPHER:
Developed at the University of Minnesota, this program uses menus (lists of choices) to browse through available information and transfer it to your own computer.

Telephone analogy: Yellow pages

WAIS:
The Wide Area Information Server, developed in a joint project by companies including Apple Computer and Dow Jones, lets you search many databases by asking questions. A popular tool for "publishing" databases on the Internet, the program responds to your questions with a list of possible choices. The program can then be re-run at regular intervals, creating a sort of personal electronic newspaper

Telephone analogy: Operator assistance, but smarter than archie or Veronica

VERONICA:
There are now so many Gophers on the Internet that people are having a hard time finding the information they need. Veronica, developed at the University of Nevada in Reno, is an example of how new tools develop from older ideas. Like archie, it collects all the words in the Gopher menu lists. Like WAIS, Veronica builds a database that can be searched with simple questions. It then builds a menu list of choices

Telephone analogy: Operator assistance

WORLD WIDE WEB:
Hypertext is the ability to link words, pictures, and ideas with other ideas, pictures and words. Designed by a programmer at the European Laboratory for Particle Physics in Switzerland, Worldwide Web (WWW), lets you navigate through linked information sources around the Internet. This can be done in a windows environment by clicking with a mouse on words or other "buttons."

Telephone analogy: Call forwarding

SOURCE: Clearinghouse for Networked Information Discovery and Retrieval

ASSOCIATED PRESS

Determining the value of a shoe store

Q: *I've worked for seven years in the shoe departments of chain and department stores. My last job was assistant buyer in a large department store which axed my job. I would like to buy a specialty shoe store. I've seen stores I liked, but have been turned off by the lack of financial information their owners had.*

In this business it is vital to keep detailed stock records. These owners report some profits. They use the "eyeball" system to manage their inventories. How can I tell how saleable the stock is, and how much such a retail store is worth?

A: Unlike your prior employers, independent owners can run their businesses any way they choose to, without the budgets and tight controls you were used to.

The low profits on the sellers'

tax returns can result from the owners' personal charges to business expenses. Go over each expense item with the owner to separate personal expenses from business costs. Add those nonbusiness charges to the operating profit. The present owners may also incur lower costs than you will, with working family members and low rent in their own store buildings.

With the aid of a savvy accountant, normalize the income statements under your ownership with industry averages to estimate your expenses and profits. Cash flow statements for the term of the purchase note will guide you to a reasonable purchase price.

Use your experience to fix a value for the inventory. Owners tend to believe their entire stock is squeaky-clean. You know better. So check out the stock for the cats and dogs. You can either make an offer for the shelf warmers, or refuse them.

Q: What advice can you give me about how much I should sell my business for. Although I have a figure in mind, I have no idea whether it's high or low.

A: Your question is one that challenges most selling owners. Too often a selling price results from a seller's wild guess.

One test to use answers the question, "Does the purchase price make sense?" It examines the purchase price, cash down payment and the purchase note terms from the buyer's position.

There's a cash-flow method for

Tyson gentle but tenacious

toward Japan and Airbus, the European aerospace consortium.

Her formal job is to advise Clinton on the impact of his economic policies — including his budget and the huge health reform package due next month.

"She's never, ever afraid to speak her mind" at meetings, said White House health spokesman Bob Boorstin. "She's really breaking new ground," he added, by helping make policies rather than merely analyzing their effects.

Tyson said it was lonely 10 years ago when she first started delving into questions of trade equity and

industrial policy, but mainstream economists are now asking the same questions.

"It makes me feel like I wasn't wrong to ask them," she said. "There's been some movement in the profession. I'm not saying I caused it."

Tyson describes herself as a "noncontroversial figure," but her professional views tend to inspire either great respect or severe skepticism.

During a World Bank mission to Yugoslavia some years ago, Robinson recalled, an eminent Yugoslav did a double take when he saw the young woman and broke away from his other duties to exclaim, "Professor Tyson! What are you doing here? You don't need to learn about Yugoslavia."

When she testified a decade ago at a House Small Business Committee hearing in California, "Dr. Tyson so impressed me that I tried to hire her immediately thereafter, but to no avail," said longtime committee Chairman John LaFalce, D-N.Y.

At the other extreme, free traders consider Tyson's ideas dangerous and macroeconomists disdain her focus on case studies. Her appointment prompted a flurry of nasty comments, some from people she had considered friends.

MIT Professor Paul Krugman, who wanted the job himself, described Tyson as "not one of the superstars." New York Times economics columnist Peter Passell said Clinton had bypassed "the wisest economic heads of his generation." Harvard economist Robert Barro wrote that Tyson "has scant academic credentials."

Tyson and others attribute the backlash to a mix of policy concerns, professional jealousy, surprise and some old-fashioned sex

---

TUESDAY

JUNE 1

EVER THOUGHT OF BEING IN A COMMERCIAL?
3-time Clio-Award winner SAMANTHA PARIS provides a comprehensive overview of the voiceover industry. June 1, 6:30-9:30pm. $80. For info: Voicetrax/SF, 415-331-8800.

Workshop-Career Development Strategies for Asian American Women. June 1-15, 6-9 pm. $110. Alumnae Resources, SF. For more information call 274-4700

Workshop-Solving Problems and Making Decisions. Learn to use both analysis and intuition 6-9 pm. $40. Alumnae Resources, SF. Reservations & info 274-4700

WEDNESDAY

JUNE 2

WELCOME TO THE BAY AREA WORKSHOP. Are you new to the area and looking for work? We will introduce you to area job resources & address the emotional issues of relocating ONLY $20! 10am-Noon. For info/reg. JVS 415-391-3600

Association for Women in Computing Panel: Careers in Transition. Dr. Karen Gardner. Gen Katz. Gina Smith

MONDAY

JUNE 7

JOB WORKSHOP - GETTING THE RIGHT JOB NOW
Begins Monday, June 7, 9 a.m.-Noon for 2 weeks. $15. Sponsored by the Community Career Education Center, San Mateo. Contact Joanne, 415-345-0753.

MAKING A CAREER CHANGE Four evenings starting June 7 at 7pm, sponsored by the Community Career Education Ctr, San Mateo. Contact Joanne, 415-345-0753.

AD COPY WRITING -- Bronze Lion and Addy award-winner Bennett Miller teaches a 10-evening workshop, "Advertising Copywriting Portfolio Workshop" Mon., June 7-Aug. 23, 7-10pm. UC Extension Dntwn, 150 Fourth St. (near Moscone Ctr at Howard). Call UC Berkeley Extension, 510-643-1063

Workshop - Dare to Change Your Job and Your Life! A holistic look at lifelong career decisions. June 7 & 14, 6-9pm, $60. Alumnae Resources, San Francisco. 274-4700

"Current European Economic Perspectives"
Speaker: Dr. Peter G. Rogge. Chief Economist and Strategist, Swiss Bank Corporation, Basel, Switzerland.
11:45 am   Stanford Court Hotel,   San Francisco.
                Members: $35. Non-members: $38.
Sponsored by the following Chambers of Commerce:
British American; German-American; Norwegian-American, San Francisco; Swedish-American; and Swiss-American,

FUTURE

Mt. Diablo ASTD and UC Berkeley Extension presents:
Training the Bay Area's Workforce:
A KEY TO ECONOMIC RENEWAL
Tuesday, June 15 at the Marriott Hotel, San Ramon
Conference 2:00-5:15 p.m., Dinner Program 5:15-8:30 p.m.
Total Program $90; Conference $75; Dinner Program $25
To register call 510-642-4111

BREAKFAST BRIEFING: "Avoiding Sexual Harassment in the Work Place: A Briefing for Small Business," presented by Susan B. Crawford, a Partner with Holtzmann, Wise & Shepard's Palo Alto labor practice. Wednesday, June 9, 8:00 a.m., Stanford Park Hotel, $25 (includes full breakfast). For information and reservations, call Cindy Leza at HWS (415-856-1200).

AMA MARKETER OF THE YEAR AWARD BANQUET
June 10, 1993 - Program begins at 5:30 PM
Grand Hyatt San Francisco on Union Square
Reservations call Susan Scoble at (415) 981-2343
Reservations also available at the door

There will be an EXECUTIVE MBA Open House at the University of San Francisco, on Thursday, June 10, 5pm-7pm in the Executive Center, Rm. 150, McLaren Building. Call 415-666-2511 to make a reservation.

Resume Writing Workshop is your resume working for you?

U.S. Shifts To a Freer Data Policy

Computer Network To Carry S.E.C. File

By JOHN MARKOFF

Special to The New York Times

SAN FRANCISCO, Oct. 21 — In the clearest indication yet of the Clinton Administration's willingness to offer broader public access to Government information, the National Science Foundation is financing a project that will make corporate filings to the Securities and Exchange Commission available free via a computer network.

The decision to support the project, which will provide access to the S.E.C.'s on-line data base of financial data from America's public corporations, is a shift away from the Federal information policies under Presidents Ronald Reagan and George Bush. Those Administrations favored letting private companies sell printed and electronic versions of Government data.

Although the National Science Foundation project, which will be announced on Friday, is a test, it has broad implications for creating fast, inexpensive consumer access to public records of all sorts. The precedent could threaten the huge industry that has grown up to sell financial records, court cases and other public documents over services like Mead Data Central's Nexis and Lexis networks.

An Administration 'Priority'

"This is a priority for this Administration," said Michael Nelson, special assistant to the director of the White House Office of Science and Technology policy. "This is another indication of the Administration's commitment to make Federal information more available to the taxpayers who paid for it."

The project will make disclosure of information from corporations accessible to anyone who has access to the Internet computer network through a modem or a direct network link. The Internet, a loose collection of computer networks that is administered by the National Science Foundation, is now routinely accessible from most university campuses and businesses.

Internet access is rapidly becoming a feature of many commercial on-line computer services as well. Some 20 million computer users are connected to the Internet.

"This is a wonderful example of how the Internet might be used to provide access to Government information," said Marc Rotenberg, national director of the Computer Professionals for Social Responsibility, a Washington public interest group.

In June, the Office of Management and Budget announced that it was reversing previous Administration policy that had defined Government

---

U.S. Shifts to Freer Policy on Data Access

information as a commodity, often available for sale to private industry. The new policy encourages Federal agencies to make as much information as possible available to the public with fees as low as possible.

The project underscores how rapidly changing computer and network technologies are making it possible to offer low-cost access to Government information that has previously been available only on paper in libraries or electronically on mainframe computers that were difficult and expensive to tap into from remote locations. But increasingly, that mainframe data can be transferred easily to inexpensive work stations.

It also emphasizes the rapidly increasing scope of Internet as the forerunner of a national data highway that is expected to carry computer data, video and voice conversations beginning in the next century.

The project, financed with a $660,000 two-year grant from the science foundation, is being undertaken by the Stern School of Business at New York University and a small Washington company, the Internet Multicasting Service. Theyplan to make the Friday announcement.

Currently the S.E.C. data base, called the Edgar Dissemination Service, is operated under contract by Mead Data Central Mead acts as a data wholesaler, providing a variety of computer data feeds to the retail information industry

Under this system, a retail information provider, like Mead Data's own Nexis service, charges about $15 for each S.E.C. document, plus a connection charge of $39 an hour and a printing charge of about $1 a page.

The only fees to use the S.E.C.'s data base under the science foundation's project would be for access to the Internet, for which pricing varies. Commercial access can be bought for as little as $2 an hour. But many college students now obtain Internet access as part of their tuition costs and many businesses buy a high-speed Internet connection that might cost the company hundreds or thousands of dollars each month but permits employees to share unlimited access to the network.

A legislative-affairs lawyer for the Information Industries Association, Ronald Plesser, said the industry would not oppose the project as long as the Government did not intend to restrict commercial publishing of Federal data.

"We have no problem with data bases being made available over the Internet," Mr. Plesser said. "But there has to be an interest in insuring a diversity of sources. We don't want a Government monopoly on the ownership and dissemination of Government information."

Representative Edward J. Markey, a Massachusetts Democrat who is chairman of the House Telecommunications Subcommittee has been pushing for greater public access to the S.E.C.'s Edgar Dissemination Service. He said today that he applauded

the science foundation's move.

"I've been trying to launch Edgar into cyberspace for the last year, and I think the S.E.C. finally gets it," Mr. Markey said, adding that he expected the project to stimulate the commercial market rather than hurt it.

"The Internet will prove to be a friend of the private information providers," he said. "It gives people a taste of what on-line information is."

The company involved in the project, the Internet Multicasting Service, is a nonprofit organization founded by Carl Malamud, an economist who developed computer technology for the Federal Reserve Bank. Mr. Malamud has also been instrumental in creating technology that is capable of broadcasting information including audio, video and data over the Internet.

"We're not interested in replacing Mead Data," Mr. Malamud said. "I'm not in the financial data base business. This is designed to demonstrate the effectiveness of this technology."

He said that the data would be delayed by a day, in contrast to the instant access that is provided by some on-line publishers for financial professionals. Under the terms of the science foundation grant, the New York University researchers will buy raw data and then reformat it so that it can be obtained easily over the Internet through Mr. Malamud's organization. Mr. Malamud said he hoped to have the new data base service operating by the end of the year.

Group to Widen Access To Federal Data Bases

By JOHN MARKOFF

A coalition of companies and universities plans to announce today an effort to make a variety of Government data bases available electronically at no cost to the public.

Begun with the Government's blessing as a technology demonstration project in January by the Internet Multicasting Service, a nonprofit organization based in Washington, the service is already providing via the Internet portions of the nation's Patent data base and many current corporate filings to the Securities and Exchange Commission.

The project, which will be supported by the Massachusetts Institute of Technology, New York University, Sun Microsystems, the MCI Communications Corporation, R. R. Donnelley & Sons and Time Inc., will expand the data bases to include the text entries of the entire Patent data base, text and images from the Trademark data base and all current S.E.C. filings, as well as other Government data bases.

The public distribution of Government information has been controversial because some Government and industry officials have argued that free distribution of the data undercuts private companies that add "value" to such information and published it electronically and on paper. Officials at the S.E.C. could not be reached for comment.

But the president of Internet Multicasting argued that there was room for both types of electronic services and that the information distributed over the Internet — it is a global web of computer networks that let computer users send and receive electronic mail and exchange software and documents — did not compete with more refined and immediate information now being sold through the commercial Lexis-Nexis on-line service.

"It is public policy that Government information should be publicly available on the information highway," said Carl Malamud, president of Internet Multicasting. "This is the basic fuel for the information economy."

While the Patent office is exploring ways to offer its data base to the project at low cost, Mr. Malamud said he was paying $8,000 a month to purchase tapes from the Securities and Exchange Commission on a two-day delay basis and that the S.E.C. and its contractor, Lexis-Nexis, are planning to raise that to $11,000 beginning in January.

The project has the backing of the Clinton Administration.

The new House Republican majority also appears to be more friendly to the idea.

An appendix to the Republican Party's "Contract with America" contains the following statement: "We will change the rules of the House to require that all documents and all conference reports and all committee reports be filed electronically as well as in writing and that they cannot be filed until they are available to any citizen who wants to pull them up."

The Internet Multicasting Service is already supplying about 10,000

More Government information may spill onto the Internet.

S.E.C. documents and 5,000 Patent Office documents via the Internet.

However, Mr. Malamud said he believed that number was artificially low and that as more commercial services like Prodigy and America Online began offering their customers full Internet access, the retrieval rates would rise.

As part of the new coalition, MCI has agreed to provide a high-speed data link between sites in Cambridge, Mass., and Washington, and M.I.T. will provide a second data site. By distributing the data bases over a private network, it will be possible to respond to requests more quickly.

An MCI executive said that Mr. Malamud's new kind of broadcasting service over computer networks was a valuable innovation.

"I think the rest of the world is listening to how valuable it is for a Government to provide information to its citizens," said Vint Cerf, an executive at MCI Data Services.

As part of the coalition, Sun Microsystems will contribute a computer work station, R. R. Donnelley will offer $100,000 in research internships at New York University and Time will include four ads in Fortune magazine publicizing the project.

BUSINESS

SEC Plans Computer Access to Business Filings

Agency Move to Greatly Expand Availability of Corporate Information

By David S. Hilzenrath
Washington Post Staff Writer

The government plans to make corporate filings to the Securities and Exchange Commission available to the public over a global computer network, greatly expanding access to a vast source of business information, officials said yesterday.

Under the program, anyone with access to a computer, a modem and the computer network Internet would be able to obtain free of charge the reports in which publicly traded corporations disclose information as varied

as quarterly profits, changes in management and pending lawsuits.

Now, electronic access to such reports can ost tens of thousands of dollars or more a year through Mead Data Central Inc., an Ohio company under contract with the SEC to sell the data wholesale. Other companies that sell the information retail can charge hundreds of dollars per computer research session. The records are also available in print, and commercial services typically charge $15 or more per document.

The chief consumers of those services include investment and law firms.

The project announced yesterday "amounts to advancing the cause of equal access to government," said consumer advocate Ralph Nader, who has been pushing for easier and less expensive public access to the reports.

The undertaking will be funded with a National Science Foundation grant of $666,528 to New York University's Stern School of Business and Internet Multicasting Service, a Washington-based nonprofit company.

James Love, head of the Taxpayer Assets

See SEC, C8, Col. 4

RALPH NADER
... *move advances access to government*

SEC Filings to Be on Computer

Project, a Nader-affiliated group, said he will use the precedent the NSF has set when he tries to persuade the Justice Department to make a legal database available to the public.

The NSF grant will enable Internet Multicasting and the university to buy the electronic data from

> ## The system would expand as the SEC's gradual conversion from paper to electronic filings progresses.

Mead and develop software to incorporate it into the Internet computer network, which millions of people worldwide already use for as little as $20 to $25 per month.

The service is scheduled to be up and running by next spring, said Carl Malamud, president of Internet Multicasting.

The system would expand as the SEC's gradual conversion from paper

to electronic filings progresses. Currently, 1,500 companies file reports electronically, but all of the 15,000 companies registered with the SEC will be required to do so by 1996.

Advocates of the plan said its prime beneficiaries will include individual investors, small businesses, financial journalists, scholars and others interested in corporate information.

But low-cost availability could undercut businesses that now sell the reports. "We question whether the government should be in business," competing with private information services companies, Mead spokeswoman Judi Schultze said.

Wall Street traders and other major investors are unlikely to stop subscribing to Mead's premier service, however, because there will be about a 24-hour lag before reports are available on the Internet, Malamud said. Also, the Internet will keep only a one-year archive of reports, he said.

The initiative is consistent with the Clinton administration's policy of making government information more readily available to the public, but the White House was not involved in the grant award, which sprang from an unsolicited application, said Stephen Wolff, director of the NSF division that deals with computer networks.

Foundation Grant Will Put SEC Data On the Internet

By Melissa Levy
Staff Reporter of The Wall Street Journal

WASHINGTON – The National Science Foundation hopes a grant intended to give colleges wider access to government filings will eventually make it easier for more Americans to gain toll-free entrance to the emerging information superhighway.

The foundation has funded a two-year program to make Securities and Exchange Commission filings available through the Internet computer network. The SEC's Electronic Data Gathering and Retrieval system, better known as Edgar, should be on the Internet by January, according to grant recipients, the New York University Stern School of Business and the Internet Multicasting Service.

Access to Edgar, which includes asset, earning and ownership data of many publicly traded companies, enhances the curricula of small institutions, which often can't afford to hook up to Edgar but are connected to the Internet, said Stephen Wolff, director of the foundation's Networking Division.

The Internet computer network increasingly serves those outside the academic community as well. James Love, director of the Taxpayers Assets Project consumer advocacy group, said more economical access to SEC filings will also "level the playing field" for small businesses and investors. An estimated 20 million users are connected to the Internet.

The foundation's grant will buy delayed data feed, or information that is 24 hours old from Mead Data Central, a unit of Mead Corp., based in Dayton, Ohio. Mead Data has a contract from the SEC to store the electronic filings and to sell the information wholesale to vendors, including its own Nexis and Lexis systems. Mead Data charges $138,000 a year for a direct feed and $78,000 a year for the delayed feed.

The SEC filings became available electronically starting in April, and more than 1,500 of the 15,000 publicly traded companies are participating. Complete phase-in of Edgar is scheduled for 1996.

Rep. Edward J. Markey (D., Mass.), who has encouraged wider public disclosure of SEC files, praised the foundation's efforts. "This pilot project may help to demonstrate new and more efficient ways of making large government databases available to the public over the information superhighway," said Rep. Markey, who is chairman of the House Telecommunications and Finance Subcommittee.

The Taxpayers Assets Project, which had targeted the SEC's Edgar program for wider access, is already prepared to pressure another agency: It seeks disclosure of the vast Justice Department database of federal legal information.

Battle Brews Over Fees for SEC Reports

Group Believes Public Should Have Free Access

By Robert Thomason
Washington Post Staff Writer

Need electronic data about the quarterly revenue of a publicly traded company? Traditionally you've had to buy the information. Now, the government database that contains it is being tapped by on-line activists who, for the time being at least, are managing to distribute it for free.

It's all perfectly legal. With government and private funding, the Washington-based Internet Multicasting Service is buying raw financial data that companies file to the Securities and Exchange Commission's "Edgar" database, then putting it on the Internet computer network, where it can be retrieved by people worldwide.

The service has fueled a debate in many government agencies as cost-conscious Republicans come to power and electronic technology advances: Should agencies put on-line for free myriad information that they generate daily, or should they charge for it and save taxpayers some serious money?

Pioneers of the information highway say

BESTSELLERS

Most popular titles in the entertainment category sold by 11 Software Etc. stores in the area in the week ended Dec. 31.

TITLE	PUBLISHER
1. Myst	Broderbund
2. Wing Commander III	Origin
3. Star Trek: The Next Generation Technical Manual	Simon & Schuster
4. Doom II	ID GT Interactive
5. King's Quest VII	Sierra Online
6. Cyberia	Interplay
7. U.S. Navy Fighters	Electronic Arts
8. Creature Shock	Virgin
9. Omar Sharif on Bridge	Interplay
10. The 7th Guest	Virgin

WASHINGTON BUSINESS/JANUARY 9, 1995

17

SEC Report Charges Create Internet Debate

the public deserves free, or at least very inexpensive, access to the SEC's huge Edgar system, which stands for Electronic Data Gathering, Analysis and Retrieval. It contains reports that publicly traded companies are required to file with the SEC.

But the SEC is resisting, choosing instead to sell the data to computer services companies that repackage it and sell it on to the public. The SEC is required to fund itself, officials point out, and revenue from these sales is a big help.

The Internet Multicasting Service, a small nonprofit organization developing new uses of the Internet, began its SEC work in January 1993 with a grant from the National Science Foundation. That grant expires this year, so the service is lining up private help. So far, money or in-kind help has been pledged by Massachusetts Institute of Technology and New York University, Sun Microsystems Inc., MCI Communications Corp., RR Donnelley & Sons Co. and Time Inc.

Carl Malamud, president of Internet Multicasting, has called the coalition the Information Highway Beautification Fund.

Although he is celebrating the successful fund-raising effort, he still believes that the government should cover the cost of disseminating information that citizens have helped to generate by paying their taxes.

Internet Multicasting and its ally in this effort, Taxpayer Assets Project, are heartened by recent Republican moves to expand on-line access to government information. But they have not received commitments from GOP lawmakers about free public access to Edgar.

"The role of the SEC is to provide information to the market," Malamud said.

As the federal government expands its presence in electronic media, putting the data on the Internet for free would be an excellent way to pursue the SEC's goal, he said. He estimated that an Internet operation would require about $100,000 to start up and would need two employees to maintain.

But the SEC, which experienced years of delays and more than $20 million in cost overruns to launch the Edgar project in the first place, is loathe to embark on new ventures when experienced and well-known companies pay well for the opportunity to do it.

David Copenhafer, who directs Edgar for the SEC, says the agency has neither the technical expertise nor the legal mandate to supply financial information in the sophisticated ways demanded by many computer users. The SEC collects raw data, but the data service companies don't typically resell it that way;

they "add value" by breaking it down into meaningful units.

"There will be hundreds of different products making use of the Edgar data to meet a tremendous spectrum of needs," Copenhafer said.

The database industry can meet these needs through their many technologies, he said, while the SEC cannot pretend to meet these needs with a single Internet database.

The information already is becoming available through a variety of computer media.

Several companies are loading SEC data on CD-ROM discs. Moody's Investor Service Inc. is offering CD-ROMs of Edgar data at $995. Another company, Edgar Express Corp. of Florida, provides filings on a CD-ROM, but charges $4 for the password necessary to access the data in a single file in it.

In addition, the SEC is working with the Government Printing Office, which will produce a CD-ROM of Edgar data. And a local firm, DBT Design of Fairfax, is training companies to file to the new system.

Dayton, Ohio-based Lexis-Nexis is the prime SEC contractor that disseminates on-line data. The firm sells instantaneous feeds of SEC filings at a regulated annual prices of $183,000 or $138,008, depending on the speed of transmission used. It also provides, each day, computer tapes of the previous day's filings for $78,000 per year. The information is also available on Lexis-Nexis.

Sharon O'Donoghue, director of corporate legal markets for Lexis-Nexis, predicted that inexpensive Internet access to raw SEC data would not cut into Lexis-Nexis's business.

Most business customers do not want entire SEC documents, which are now available on the Internet and can be more than 100 pages long, O'Donoghue said.

Instead, she said, they want highly specific information about companies that would enhance their particular investment strategies. And some need it in a matter of seconds, or else the information is useless, she added.

In development since 1983, Edgar is scheduled to include filings from all of the 15,000 public companies this summer. The SEC operates the system in offices in Springfield, where it receives the data from the filing companies, compiles it and ships it electronically. ∎

To access Internet Multicasting's Edgar data, Internet subscribers can use the gopher function to reach gopher.town.hall.org, the ftp function to reach ftp.town.hall.org, or the World Wide Web to reach www.town.hall.org. Information can also be obtained through electronic mail by sending a message to mail@town.hall.org with the word help as the text of the message.

Internet-savvy investors download SEC filings

Mercury News Staff and Wire Report

The public got its first chance earlier this year to obtain corporate filings from the Edgar computer system developed by the U.S. Securities and Exchange Commission

Rep. Edward Markey, D-Mass., last year sought grant money to make Edgar available through the Internet as part of an experiment on how to disseminate the enormous volume of computerized records amassed by the government.

The project, funded by the National Science Foundation, is overseen by New York University's Stern School of Business. Each day, the SEC provides computer tapes of Edgar filings for the last 24 hours to the Internet Multicasting Service, a Washington organization that operates the connection

Carl Malamud, president of Internet Multicasting, said 3,500 to 4,000 SEC filings are downloaded daily over the widely used network of government, university and corporate computers.

Advocates of cheap public access to government data view the project as a coup. Some believe the link sets an important precedent for how government information should be priced and sold to the public in the digital age.

The arrangement is seen as an example of the national computerized information system envisioned by Vice President Al Gore.

The Internet arrangement is hardly a panacea, however, for investors, job hunters, researchers and political activists seeking access to Edgar data. While Internet access is cheap when compared with expensive commercial data bases, it still costs money and requires a basic investment in computer equipment that many Americans can't afford.

Detractors also point out that the Internet isn't easy to use at first and doesn't always locate documents. The procedures for gaining access to Edgar documents are as cumbersome as any other excursion to remote outposts on the information superhighway. In effect, the process is indecipherable to those who lack familiarity with modems, menus and convoluted network syntax.

"It's not like putting all of this

REACHING EDGAR

Computer users who want to gain access to Edgar data over the Internet can get further instructions for using the service two ways:

■ Those who do not have an Internet account should use one of the on-line services (for example, America Online, Mercury Center or Compuserve) that allows you to exchange electronic mail with Internet addressees. Send an e-mail message to mail@town.hall.org that simply says "help." The request will automatically generate a return message with additional instructions.

■ Those who have an Internet account should use one of the software navigational techniques for accessing information such as Gopher or Mosaic. Go to the host computer designated town.hall.org to find a menu with additional information about the service.

stuff in electronic media will make it more accessible to Mom and Pop," said Thomas Vos, vice president of Bowne & Co., an electronic publishing firm.

Even when potential users successfully navigate their way through SEC filings, they may be disappointed with their findings.

The service is more like an electronic filing cabinet that allows retrieval of a specific document, rather than a well-designed data base that facilitates searches of all documents for information fitting certain specifications.

Edgar reports also lack many of the helpful features of printed documents. Because Edgar is a text-based system, companies must omit charts, graphs, illustrations or photographs they routinely provide in printed documents. The SEC requires Edgar filers to include text that describes any charts, graphs or other illustrations.

For users who don't need very rapid access to a particular company filing, the best course may be to call the firm's investor relations department and ask for a copy.

The Executive Computer/Laurie Flynn

Need Timely S.E.C. Corporate Filings? Look on Internet

The world's most valuable financial data are available to desktop PC's.

EVEN as the Internet has become a place where businesses are afraid not to be represented, it is also quickly becoming one of the richest sources of the hard financial data on which businesses thrive

Thanks to the National Science Foundation and the efforts of a few noisy consumer groups, the electronic filings of the Securities and Exchange Commission — arguably the world's most valuable collection of financial data — are now available to anyone with a PC and a modem

For several years, the S E C has been gradually converting to a computerized version of the various documents that it requires publicly traded companies to file So far, this system, known as Edgar — an acronym for Electronic Data Gathering and Retrieval — contains filings from only a few thousand companies But it is supposed to include all S.E.C.-regulated companies by 1996

The S.E.C.'s Edgar documents are available for a fee through more than a dozen commercial online services, including Mead Data Central, Disclosure or Dow Jones.
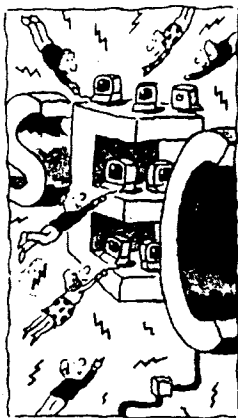
But since February, in a service that is called Edgar on the Internet.

the S E C.'s electronic documents are free for the taking. Free, that is, if you don't count your portion of the $60 million or so in Federal tax dollars that go to compiling S.E.C data every year, or the $680 million National Science Foundation grant that is paying for the two-year Edgar on the Internet project.

Still, when you consider the high prices charged by commercial information providers, Edgar on the Internet is a heck of a deal. And the project's full potential is still untapped, according to its gatekeepers — a "cyberstation" in Washington called the Internet Multicasting Service The N.S.F. is paying the service to put the data on the Net each day New York University's Stern School of Business is working with Internet Multicasting Service, packaging the raw Internet Edgar data so that it is easier for businesses and individuals to use.

•

Like anything on the Internet, using Edgar can be a true navigational challenge. But there are several ways to wade in The one you choose depends as much on the technology at your disposal as it does on just what you plan to do with the data once you've got it

One way is to send electronic mail requesting specific files. This works fine if all you need is the occasional document or two, but it is inefficient if you want to see a lot of material The advantage to using E-mail is that you don't need an Internet account, virtually all the commercial online services have E-mail gateways that let

you send messages anywhere on the Internet

To retrieve files this way, you first send a message to the Edgar systems server computer at the Internet Multicasting Service (the address is mail@town.hall.org) This message should request an index of Edgar documents and a list of the commands for retrieving them After that you're ready to request specific files The server automatically processes the requests and sends the documents back via E-mail usually

within a few hours

The more efficient method and more popular one among Net surfers is to access Edgar directly over the Internet. This can be done using one of the many software navigational techniques for accessing information, such as Mosaic or World Wide Web, or by using one of the online services that provides Internet access, like America Online.

If you want to retrieve each daily update to the Edgar data bank — a technique known as "mirroring" — you're best off using an Internet file-transfer method known as FTP, for file transfer protocol FTP allows a user to log on directly to the server computer containing the Edgar files

For people eager for fresh financial data, Edgar on the Internet has one huge drawback, the data from the S.E.C. is delayed by almost two days That's because the Internet Multicasting Service is buying the S E C.'s daily feed of data on tape, via overnight mail, and then uploading it onto the Net that evening If immediate access matters to you, you're better off subscribing to one of the commercial services with links to Edgar

There's another cloud hanging over Edgar on the Internet The project finds itself in the middle of a fight between consumer advocates, who are scrambling to make sure it continues after its N.S.F. grant runs out in 1995, and the Securities and Exchange Commission, which holds the keys to the data.

In the consumer corner is the Taxpayers Assets Project, a Washington organization TAP, as the group is

Kovacs contends that because the S E C information is public it should be available for free, or nearly so, to anyone who wants it — perhaps directly through the S E C itself

In the other corner is the S E C It argues that precisely because Edgar on the Internet is free, the project is impeding development of a market for low-priced commercial services in which the vendors might earn a small profit in return for packaging the data in a form that is more usable and more secure than a raw Internet feed "Putting it out on the Internet has slowed information services acquiring the feed and putting it up on their own services," said John Lane, chief information officer at the S E C

"I would think there are some companies who care about security and reliability who wouldn't want to get Edgar files over the Internet," said Mr. Lane, who contends that the Internet's global vastness and lack of structure leaves users vulnerable to eavesdropping and intrusions With private services like Mead's, he said, "You pay a fee, but what the fee pays for is a guaranty against hacking and viruses, and an assurance that what you need is going to be there "

•

As is typical among Internet true-believers, the folks over at the Internet Multicasting Service have little patience with arguments like Mr Lane's "Ours is much more secure" than many current commercial Edgar services, said Carl Malamud, president of Internet Multicasting "Every one of our documents is stamped with a digital signature"

And for James P. Love, a TAP lawyer, the issue is not simply a technological one

"Here's a project that's working, that vastly enhances the mission of the agency," he said of Edgar on Internet. "And the S.E.C.'s not interested"

Whatever the outcome of the debate, Internet Multicasting Services does not intend to become the permanent source of S.E.C. data over the Internet.

"I think the S.E.C. should do it," Mr. Malamud said. "In my view, they have an obligation to move their information onto the superhighway."

And Mr. Love of TAP argues that Edgar on the Internet is encouraging new uses of the S.E.C. data. Any

group with its own electronic bulletin board can "mirror" the Edgar database and redistribute the material in a format more suitable to a specific community of users

Investors Alliance, a personal-investment club in Fort Lauderdale, Fla., for example, downloads the 10 megabytes or so of new S E C material posted daily on the Internet and makes it available to users of its electronic bulletin board system This saves individual members of the alliance from having to seek out the data themselves Some corporate users, including law firms, are similarly amassing the data and repackaging it to meet their specific needs

For those PC users who would just as soon avoid the sometimes-messy business of the Internet but who can't justify the high cost of an institutional service like Mead's, there are other electronic ways to access S E C documents Compuserve is the oldest and largest of the general-purpose services and the one that offers the widest selection of financial data bases which Compuserve presents in a straightforward manner S E C data is offered through Compuserve's Disclosure data base

But even through Compuserve's Disclosure service the S E C data doesn't come cheap The monthly fee is low enough, but there are also charges based on the length of each online session And in the Disclosure data base, each company profile is $5, while the full company report, including financial statements is $17 each

•

Another alternative comes from Mead itself In April, the company introduced the Edgar Interactive Service, which provides weekly up dates of all S E C filings through an easy-to-use Windows interface The price is $3,500 a month for unlimited use, and Mead plans to soon lower this fee.

As for the populist Edgar on the Internet, if early demand is any indication, the system's flaws don't appear to be scaring people off Based on current usage, in the first year of the service users may retrieve nearly 500,000 documents — a strikingly high number, considering that all S.E.C data won't be on Edgar until 1996.

The only question is whether the Internet version of Edgar will still be around by then   ∎

BUSINESS

International Herald Tribune, Saturday-Sunday, October 23-24, 1993

Your Company, On-Line

SEC Data to Come Free via Computer

By John Markoff
New York Times Service

SAN FRANCISCO — Showing the Clinton administration's willingness to offer broader public access to government information, the National Science Foundation is financing a project that will make corporate filings to the Securities and Exchange Commission available free via a computer network.

The project will provide access to the SEC's on-line data base of financial information from America's public corporations. The decision to support it is a shift away from the federal information policies under Presidents Ronald Reagan and George Bush. Those administrations favored letting private companies sell printed and electronic versions of government data.

Although the National Science Foundation project is a test, it has broad implications for creating fast, inexpensive consumer access to public records of all sorts. The precedent could threaten the huge industry that has grown up to sell financial records, court cases and other public documents over services like Mead Data Central's Nexis and Lexis networks.

"This is another indication of the administration's commitment to make federal information more available to the taxpayers who paid for it," said Michael Nelson, special assistant to the director of the White House Office of Science and Technology policy.

In June, the Office of Management and Budget announced that it was reversing previous administration policy that had defined government information as a commodity, often available for sale to private industry. The new policy encourages federal agencies to make as much information as possible available to the public with fees as low as possible.

The project will make disclo-

Previous administrations favored letting private companies sell official data.

sure of information from corporations accessible to anyone who has access to the Internet computer network through a modem or a direct network link. The Internet, a loose collection of computer networks that is administered by the National Science Foundation, is now routinely accessible from most university campuses and businesses.

Internet access is rapidly becoming a feature of many commercial on-line computer services as well. Some 20 million computer users are connected to the Internet.

"This is a wonderful example of how the Internet might be used to provide access to government information," said Marc

Rotenberg, national director of Computer Professionals for Social Responsibility, a Washington public interest group.

The project underscores how rapidly changing technologies are making it possible to offer low-cost access to government information that has previously been available only on paper in libraries or electronically on mainframe computers that were difficult and expensive to tap into from remote locations.

But increasingly, that mainframe data can be transferred easily to inexpensive work stations.

It also emphasizes the increasing scope of Internet as the forerunner of a national data highway that is expected to carry computer data, video and voice in the next century.

The project, financed with a $660,000 grant from the science foundation, is being undertaken by the Stern School of Business at New York University and a small Washington company, the Internet Multicasting Service.

Under the current system, a retail information provider, like Mead Data Central's Nexis service, charges about $15 for each SEC document, plus a connection charge of $39 an hour and a printing charge of about $1 a page.

The only fees to use the SEC's data base under the science foundation's project would be for access to the Internet, for which pricing varies. Commercial access can be bought for as little as $2 an hour.

Internet Users Get Access To S.E.C. Filings Fee-Free

By PETER H. LEWIS

In a two-year experiment that begins today, documents filed electronically to the Securities and Exchange Commission from public companies will be available to users of Internet, a global network of computer networks.

Documents obtainable on the service include annual reports, 10-K filings, proxy statements and other information valued by traders and investors. These documents are already available electronically through commercial data suppliers, including Mead Data Central Inc. of Dayton, Ohio, but the new Internet service is the first to make them available without additional charges.

The new service is the most ambitious experiment so far by the Clinton Administration to make much Government information widely available to the public at minimum cost. Although access to Internet itself can be costly, millions of people can tap into it through commercial, Government and educational computer networks. Once a computer user is connected to Internet, a giant global network that links millions of large and small computers so they can share information, there is typically no extra fee for document transfers.

Financed by Taxes

"We have a policy that Government information ought to be made available at only the marginal cost to provide the information," said Tom Kalil, who coordinates science and technology policy at the White House's National Economic Council. "We view this type of information dissemination as one of the ways we can address the info 'haves and have-nots' issue. Since taxpayers have already paid for it, the idea of making it available was appealing."

The cost of providing the S.E.C. data to Internet users is being underwritten by a National Science Foundation grant to the New York University Business School. In turn, the contract for operation of the computer data bases is with a not-for-profit company, the Internet Multicasting Service of Washington.

Coordination With S.E.C.

Carl Malamud, the principal of Internet Multicasting, said the S.E.C. is charging $78,000 a year to supply his company with data tapes of each day's filings. The fee, he said, basically covers the cost of the tapes and messenger fees. Mr. Malamud said the S.E.C. has projected that as many as 50 gigabytes of data — 50 billion characters of information — will be supplied each year. An average S.E.C. document contains about 3,000 characters, he said.

Mr. Malamud said that although they offered the same raw data, his Government-subsidized service is not in conflict with commercial information services like Mead Data. In return for its higher fees, Mead Data provides search software that makes it easier to find a particular document, and it guarantees its customers access to the data within minutes of the time the document is filed.

"Our data is 24 hours later than theirs, and we are not massaging the data to the extent that Mead is," Mr. Malamud said, although a goal of the experiment is to fashion easier search and retrieval mechanisms for the raw S.E.C. data.

Also, only 50 Internet users can gain access to the S.E.C. data base at one time, he said, cautioning that "if you were betting your business on getting a document right away, you shouldn't bet on us."

Computer users with access to Internet can get more information by sending an electronic-mail message to "mail[at]town.hall.org" requesting help. Those without Internet access can telephone (202) 628-2044.

Job hunting? Check today's Times.

SEC Database Now On Internet • • • • •

Networks may set information free, but they also raise big questions about who is going to pay the travel bills. Such questions are now being debated in the corridors of Washington by politicians who would reinvent both the way our government distributes information and the companies who now make their livings from doing so. In October, information activists successfully lobbied the SEC to unleash onto the Internet EDGAR, the huge database of corporate financial information gathered by the Securities and Exchange Commission (SEC).

For better or worse - but hopefully for better - the SEC's EDGAR database will be an important test case for the future of government information. In 1989, understandably hoping to contract out as much data-processing grunt work

as possible, the SEC hired Mead Data Central to manage its huge database of corporate financial information. In return for keeping the records in electronic order, Mead received US$14 million over several years and privileged access to SEC information, which Mead then sold to the public through its Nexis database at $200 to $300 an hour.

Efficient though Mead undoubtedly is, it has no incentive to make SEC information widely and cheaply available. On the contrary, doing so would simply cut into its own business. So, to give taxpayers better access to the information they have paid to gather, Ed Markey, chairman of the House Telecommunications Committee, has controversially invoked the government's right to distribute magnetic tapes of SEC data in

• •

order to set up an alternative to Mead: Carl Malamud's Internet Multicasting Service.

With a $670,000 grant from the National Science Foundation, computers donated by Sun Microsystems, and network services from UUNET Technologies, Malamud must now prove that he can do at least as good a job as Mead of distributing the SEC data to investors and businesspeople - at no charge. Already he is brimming with ideas to create new services that take advantage of Internet connectivity. In addition to retrieving data directly, Malamud hopes to send out financial reports automatically in response to e-mail, and he is trying to create new technologies for "multicasting" - somewhat like broadcasting over networks - to enable groups to subscribe to financial data.

If Malamud's efforts succeed, they will set a vital precedent for freer government information. But technology isn't the only impediment to setting information loose. The Justice Department is being forced to shut down its own venture into the electronic publishing of legal information, a database system called JURIS, in a copyright dispute with West Publishing. Although the government owns the information in the reports of court cases and the like, West has copyrighted the format in which court cases are cited. West and the Justice Department have not agreed on terms for the government to use West's citations in the JURIS database. So JURIS will close at the end of 1993. It appears that the road to freer information will be long and twisty. For info, e-mail *edgar-announce@town.hall.org. - John Browning*

U.S. Shifts To a Freer Data Policy

Computer Network To Carry S.E.C. File

By JOHN MARKOFF

Special to The New York Times

SAN FRANCISCO, Oct. 21 — In the clearest indication yet of the Clinton Administration's willingness to offer broader public access to Government information, the National Science Foundation is financing a project that will make corporate filings to the Securities and Exchange Commission available free via a computer network.

The decision to support the project, which will provide access to the S.E.C.'s on-line data base of financial data from America's public corporations, is a shift away from the Federal information policies under Presidents Ronald Reagan and George Bush. Those Administrations favored letting private companies sell printed and electronic versions of Government data.

Although the National Science Foundation project, which will be announced on Friday, is a test, it has broad implications for creating fast, inexpensive consumer access to public records of all sorts. The precedent could threaten the huge industry that has grown up to sell financial records, court cases and other public documents over services like Mead Data Central's Nexis and Lexis networks.

An Administration 'Priority'

"This is a priority for this Administration," said Michael Nelson, special assistant to the director of the White House Office of Science and Technology policy. "This is another indication of the Administration's commitment to make Federal information more available to the taxpayers who paid for it."

The project will make disclosure of information from corporations accessible to anyone who has access to the Internet computer network through a modem or a direct network link. The Internet, a loose collection of computer networks that is administered by the National Science Foundation, is now routinely accessible from most university campuses and businesses.

Internet access is rapidly becoming a feature of many commercial on-line computer services as well. Some 20 million computer users are connected to the Internet.

"This is a wonderful example of how the Internet might be used to provide access to Government information," said Marc Rotenberg, national director of the Computer Professionals for Social Responsibility, a Washington public interest group.

In June, the Office of Management and Budget announced that it was reversing previous Administration policy that had defined Government

---

U.S. Shifts to Freer Policy on Data Access

information as a commodity, often available for sale to private industry. The new policy encourages Federal agencies to make as much information as possible available to the public with fees as low as possible.

The project underscores how rapidly changing computer and network technologies are making it possible to offer low-cost access to Government information that has previously been available only on paper in libraries or electronically on mainframe computers that were difficult and expensive to tap into from remote locations. But increasingly, that mainframe data can be transferred easily to inexpensive work stations.

It also emphasizes the rapidly increasing scope of Internet as the forerunner of a national data highway that is expected to carry computer data, video and voice conversations beginning in the next century.

The project, financed with a $660,000 two-year grant from the science foundation, is being undertaken by the Stern School of Business at New York University and a small Washington company, the Internet Multicasting Service. Theyplan to make the Friday announcement.

Currently the S.E.C. data base, called the Edgar Dissemination Service, is operated under contract by Mead Data Central. Mead acts as a data wholesaler, providing a variety of computer data feeds to the retail information industry

Under this system, a retail information provider, like Mead Data's own Nexis service, charges about $15 for each S.E.C. document, plus a connection charge of $39 an hour and a printing charge of about $1 a page.

The only fees to use the S.E.C.'s data base under the science foundation's project would be for access to the Internet, for which pricing varies. Commercial access can be bought for as little as $2 an hour. But many college students now obtain Internet access as part of their tuition costs and many businesses buy a high-speed Internet connection that might cost the company hundreds or thousands of dollars each month but permits employees to share unlimited access to the network.

A legislative-affairs lawyer for the information Industries Association, Ronald Plesser, said the industry would not oppose the project as long as the Government did not intend to restrict commercial publishing of Federal data.

"We have no problem with data bases being made available over the Internet," Mr. Plesser said. "But there has to be an interest in insuring a diversity of sources. We don't want a Government monopoly on the ownership and dissemination of Government information."

Representative Edward J. Markey, a Massachusetts Democrat who is chairman of the House Telecommunications Subcommittee has been pushing for greater public access to the S.E.C.'s Edgar Dissemination Service. He said today that he applauded

the science foundation's move.

"I've been trying to launch Edgar into cyberspace for the last year, and, I think the S.E.C. finally gets it," Mr. Markey said, adding that he expected the project to stimulate the commercial market rather than hurt it.

"The Internet will prove to be a friend of the private information providers," he said. "It gives people a taste of what on-line information is."

The company involved in the project, the Internet Multicasting Service, is a nonprofit organization founded by Carl Malamud, an economist who developed computer technology for the Federal Reserve Bank. Mr. Malamud has also been instrumental in creating technology that is capable of broadcasting information including audio, video and data over the Internet.

"We're not interested in replacing Mead Data," Mr. Malamud said. "I'm not in the financial data base business. This is designed to demonstrate the effectiveness of this technology."

He said that the data would be delayed by a day, in contrast to the instant access that is provided by some on-line publishers for financial professionals. Under the terms of the science foundation grant, the New York University researchers will buy raw data and then reformat it so that it can be obtained easily over the Internet through Mr. Malamud's organization. Mr. Malamud said he hoped to have the new data base service operating by the end of the year.

Group to Widen Access To Federal Data Bases

By JOHN MARKOFF

A coalition of companies and universities plans to announce today an effort to make a variety of Government data bases available electronically at no cost to the public.

Begun with the Government's blessing as a technology demonstration project in January by the Internet Multicasting Service, a nonprofit organization based in Washington, the service is already providing via the Internet portions of the nation's Patent data base and many current corporate filings to the Securities and Exchange Commission.

The project, which will be supported by the Massachusetts Institute of Technology, New York University, Sun Microsystems, the MCI Communications Corporation, R. R. Donnelley & Sons and Time Inc., will expand the data bases to include the text entries of the entire Patent data base, text and images from the Trademark data base and all current S.E.C. filings, as well as other Government data bases.

The public distribution of Government information has been controversial because some Government and industry officials have argued that free distribution of the data undercuts private companies that add "value" to such information and published it electronically and on paper. Officials at the S.E.C. could not be reached for comment.

But the president of Internet Multicasting argued that there was room for both types of electronic services and that the information distributed over the Internet — it is a global web of computer networks that let computer users send and receive electronic mail and exchange software and documents — did not compete with more refined and immediate information now being sold through the commercial Lexis-Nexis on-line service.

"It is public policy that Government information should be publicly available on the information highway," said Carl Malamud, president of Internet Multicasting. "This is the basic fuel for the information economy."

While the Patent office is exploring ways to offer its data base to the project at low cost, Mr. Malamud said he was paying $8,000 a month to purchase tapes from the Securities and Exchange Commission on a two-day delay basis and that the S.E.C. and its contractor, Lexis-Nexis, are planning to raise that to $11,000 beginning in January.

The project has the backing of the Clinton Administration.

The new House Republican majority also appears to be more friendly to the idea.

An appendix to the Republican Party's "Contract with America" contains the following statement: "We will change the rules of the House to require that all documents and all conference reports and all committee reports be filed electronically as well as in writing and that they cannot be filed until they are available to any citizen who wants to pull them up."

The Internet Multicasting Service is already supplying about 10,000

More Government information may spill onto the Internet.

S.E.C. documents and 5,000 Patent Office documents via the Internet.

However, Mr. Malamud said he believed that number was artificially low and that as more commercial services like Prodigy and America Online began offering their customers full Internet access, the retrieval rates would rise.

As part of the new coalition, MCI has agreed to provide a high-speed data link between sites in Cambridge, Mass., and Washington, and M.I.T. will provide a second data site. By distributing the data bases over a private network, it will be possible to respond to requests more quickly.

An MCI executive said that Mr. Malamud's new kind of broadcasting service over computer networks was a valuable innovation.

"I think the rest of the world is listening to how valuable it is for a Government to provide information to its citizens," said Vint Cerf, an executive at MCI Data Services.

As part of the coalition, Sun Microsystems will contribute a computer work station, R. R. Donnelley will offer $100,000 in research internships at New York University and Time will include four ads in Fortune magazine publicizing the project.

BUSINESS

SEC Plans Computer Access to Business Filings

Agency Move to Greatly Expand Availability of Corporate Information

By David S. Hilzenrath
Washington Post Staff Writer

The government plans to make corporate filings to the Securities and Exchange Commission available to the public over a global computer network, greatly expanding access to a vast source of business information, officials said yesterday.

Under the program, anyone with access to a computer, a modem and the computer network Internet would be able to obtain free of charge the reports in which publicly traded corporations disclose information as varied

as quarterly profits, changes in management and pending lawsuits.

Now, electronic access to such reports can ost tens of thousands of dollars or more a year through Mead Data Central Inc., an Ohio company under contract with the SEC to sell the data wholesale. Other companies that sell the information retail can charge hundreds of dollars per computer research session. The records are also available in print, and commercial services typically charge $15 or more per document.

The chief consumers of those services include investment and law firms.

The project announced yesterday "amounts to advancing the cause of equal access to government," said consumer advocate Ralph Nader, who has been pushing for easier and less expensive public access to the reports.

The undertaking will be funded with a National Science Foundation grant of $666,528 to New York University's Stern School of Business and Internet Multicasting Service, a Washington-based nonprofit company.

James Love, head of the Taxpayer Assets

See SEC, C8, Col. 4

RALPH NADER

... *move advances access to government*

SEC Filings to Be on Computer

SEC, From C1

Project, a Nader-affiliated group, said he will use the precedent the NSF has set when he tries to persuade the Justice Department to make a legal database available to the public.

The NSF grant will enable Internet Multicasting and the university to buy the electronic data from

The system would expand as the SEC's gradual conversion from paper to electronic filings progresses.

Mead and develop software to incorporate it into the Internet computer network, which millions of people worldwide already use for as little as $20 to $25 per month.

The service is scheduled to be up and running by next spring, said Carl Malamud, president of Internet Multicasting.

The system would expand as the SEC's gradual conversion from paper

to electronic filings progresses. Currently, 1,500 companies file reports electronically, but all of the 15,000 companies registered with the SEC will be required to do so by 1996.

Advocates of the plan said its prime beneficiaries will include individual investors, small businesses, financial journalists, scholars and others interested in corporate information.

But low-cost availability could undercut businesses that now sell the reports. "We question whether the government should be in business" competing with private information services companies, Mead spokeswoman Judi Schultze said.

Wall Street traders and other major investors are unlikely to stop subscribing to Mead's premier service, however, because there will be about a 24-hour lag before reports are available on the Internet, Malamud said. Also, the Internet will keep only a one-year archive of reports, he said.

The initiative is consistent with the Clinton administration's policy of making government information more readily available to the public, but the White House was not involved in the grant award, which sprang from an unsolicited application, said Stephen Wolff, director of the NSF division that deals with computer networks.

Foundation Grant Will Put SEC Data On the Internet

By MELISSA LEVY

Staff Reporter of THE WALL STREET JOURNAL

WASHINGTON — The National Science Foundation hopes a grant intended to give colleges wider access to government filings will eventually make it easier for more Americans to gain toll-free entrance to the emerging information superhighway.

The foundation has funded a two-year program to make Securities and Exchange Commission filings available through the Internet computer network. The SEC's Electronic Data Gathering and Retrieval system, better known as Edgar, should be on the Internet by January, according to grant recipients, the New York University Stern School of Business and the Internet Multicasting Service.

Access to Edgar, which includes asset, earning and ownership data of many publicly traded companies, enhances the curricula of small institutions, which often can't afford to hook up to Edgar but are connected to the Internet, said Stephen Wolff, director of the foundation's Networking Division.

The Internet computer network increasingly serves those outside the academic community as well. James Love, director of the Taxpayers Assets Project consumer advocacy group, said more economical access to SEC filings will also "level the playing field" for small businesses and investors. An estimated 20 million users are connected to the Internet.

The foundation's grant will buy delayed data feed, or information that is 24 hours old from Mead Data Central, a unit of **Mead** Corp., based in Dayton, Ohio. Mead Data has a contract from the SEC to store the electronic filings and to sell the information wholesale to vendors, including its own Nexis and Lexis systems. Mead Data charges $138,000 a year for a direct feed and $78,000 a year for the delayed feed.

The SEC filings became available electronically starting in April, and more than 1,500 of the 15,000 publicly traded companies are participating. Complete phase-in of Edgar is scheduled for 1996.

Rep. Edward J. Markey (D., Mass.), who has encouraged wider public disclosure of SEC files, praised the foundation's efforts. "This pilot project may help to demonstrate new and more efficient ways of making large government databases available to the public over the information superhighway," said Rep. Markey, who is chairman of the House Telecommunications and Finance Subcommittee.

The Taxpayers Assets Project, which had targeted the SEC's Edgar program for wider access, is already prepared to pressure another agency: It seeks disclosure of the vast Justice Department database of federal legal information.

Battle Brews Over Fees for SEC Reports

Group Believes Public Should Have Free Access

By Robert Thomason
Washington Post Staff Writer

Need electronic data about the quarterly revenue of a publicly traded company? Traditionally you've had to buy the information. Now, the government database that contains it is being tapped by on-line activists who, for the time being at least, are managing to distribute it for free.

It's all perfectly legal. With government and private funding, the Washington-based Internet Multicasting Service is buying raw financial data that companies file to the Securities and Exchange Commission's "Edgar" database, then putting it on the Internet computer network, where it can be retrieved by people worldwide.

The service has fueled a debate in many government agencies as cost-conscious Republicans come to power and electronic technology advances: Should agencies put on-line for free myriad information that they generate daily, or should they charge for it and save taxpayers some serious money?

Pioneers of the information highway say

BESTSELLERS

Most popular titles in the entertainment category sold by 11 Software Etc. stores in the area in the week ended Dec. 31.

	TITLE	PUBLISHER
1.	Myst	Broderbund
2.	Wing Commander III	Origin
3.	Star Trek: The Next Generation Technical Manual	Simon & Schuster
4.	Doom II	ID-GT Interactive
5.	King's Quest VII	Sierra Online
6.	Cyberia	Interplay
7.	U.S. Navy Fighters	Electronic Arts
8.	Creature Shock	Virgin
9.	Omar Sharif on Bridge	Interplay
10.	The 7th Guest	Virgin

SEC Report Charges Create Internet Debate

the public deserves free, or at least very inexpensive, access to the SEC's huge Edgar system, which stands for Electronic Data Gathering, Analysis and Retrieval. It contains reports that publicly traded companies are required to file with the SEC.

But the SEC is resisting, choosing instead to sell the data to computer services companies that repackage it and sell it on to the public. The SEC is required to fund itself, officials point out, and revenue from these sales is a big help.

The Internet Multicasting Service, a small nonprofit organization developing new uses of the Internet, began its SEC work in January 1993 with a grant from the National Science Foundation. That grant expires this year, so the service is lining up private help. So far, money or in-kind help has been pledged by Massachusetts Institute of Technology and New York University, Sun Microsystems Inc., MCI Communications Corp., RR Donnelley & Sons Co. and Time Inc.

Carl Malamud, president of Internet Multicasting, has called the coalition the Information Highway Beautification Fund.

Although he is celebrating the successful fund-raising effort, he still believes that the government should cover the cost of disseminating information that citizens have helped to generate by paying their taxes.

Internet Multicasting and its ally in this effort, Taxpayer Assets Project, are heartened by recent Republican moves to expand on-line access to government information. But they have not received commitments from GOP lawmakers about free public access to Edgar.

"The role of the SEC is to provide information to the market," Malamud said.

As the federal government expands its presence in electronic media, putting the data on the Internet for free would be an excellent way to pursue the SEC's goal, he said. He estimated that an Internet operation would require about $100,000 to start up and would need two employees to maintain.

But the SEC, which experienced years of delays and more than $20 million in cost overruns to launch the Edgar project in the first place, is loathe to embark on new ventures when experienced and well-known companies pay well for the opportunity to do it.

David Copenhafer, who directs Edgar for the SEC, says the agency has neither the technical expertise nor the legal mandate to supply financial information in the sophisticated ways demanded by many computer users. The SEC collects raw data, but the data service companies don't typically resell it that way;

they "add value" by breaking it down into meaningful units.

"There will be hundreds of different products making use of the Edgar data to meet a tremendous spectrum of needs," Copenhafer said.

The database industry can meet these needs through their many technologies, he said, while the SEC cannot pretend to meet these needs with a single Internet database.

The information already is becoming available through a variety of computer media.

Several companies are loading SEC data on CD-ROM discs. Moody's Investor Service Inc. is offering CD-ROMs of Edgar data at $995. Another company, Edgar Express Corp. of Florida, provides filings on a CD-ROM, but charges $4 for the password necessary to access the data in a single file in it.

In addition, the SEC is working with the Government Printing Office, which will produce a CD-ROM of Edgar data. And a local firm, DBT Design of Fairfax, is training companies to file to the new system.

Dayton, Ohio-based Lexis-Nexis is the prime SEC contractor that disseminates on-line data. The firm sells instantaneous feeds of SEC filings at a regulated annual prices of $183,000 or $138,000, depending on the speed of transmission used. It also provides, each day, computer tapes of the previous day's filings for $78,000 per year. The information is also available on Lexis-Nexis.

Sharon O'Donoghue, director of corporate legal markets for Lexis-Nexis, predicted that inexpensive Internet access to raw SEC data would not cut into Lexis-Nexis's business.

Most business customers do not want entire SEC documents, which are now available on the Internet and can be more than 100 pages long, O'Donoghue said.

Instead, she said, they want highly specific information about companies that would enhance their particular investment strategies. And some need it in a matter of seconds, or else the information is useless, she added.

In development since 1983, Edgar is scheduled to include filings from all of the 15,000 public companies this summer. The SEC operates the system in offices in Springfield, where it receives the data from the filing companies, compiles it and ships it electronically. ■

To access Internet Multicasting's Edgar data, Internet subscribers can use the gopher function to reach gopher.town.hall.org, the ftp function to reach ftp.town.hall.org, or the World Wide Web to reach www.town.hall.org. Information can also be obtained through electronic mail by sending a message to mail@town.hall.org with the word help as the text of the message.

Internet-savvy investors download SEC filings

Mercury News Staff and Wire Report

The public got its first chance earlier this year to obtain corporate filings from the Edgar computer system developed by the U.S. Securities and Exchange Commission

Rep. Edward Markey, D-Mass., last year sought grant money to make Edgar available through the Internet as part of an experiment on how to disseminate the enormous volume of computerized records amassed by the government.

The project, funded by the National Science Foundation, is overseen by New York University's Stern School of Business. Each day, the SEC provides computer tapes of Edgar filings for the last 24 hours to the Internet Multicasting Service, a Washington organization that operates the connection

Carl Malamud, president of Internet Multicasting, said 3,500 to 4,000 SEC filings are downloaded daily over the widely used network of government, university and corporate computers.

Advocates of cheap public access to government data view the project as a coup. Some believe the link sets an important precedent for how government information should be priced and sold to the public in the digital age.

The arrangement is seen as an example of the national computerized information system envisioned by Vice President Al Gore.

The Internet arrangement is hardly a panacea, however, for investors, job hunters, researchers and political activists seeking access to Edgar data. While Internet access is cheap when compared with expensive commercial data bases, it still costs money and requires a basic investment in computer equipment that many Americans can't afford.

Detractors also point out that the Internet isn't easy to use at first and doesn't always locate documents. The procedures for gaining access to Edgar documents are as cumbersome as any other excursion to remote outposts on the information superhighway. In effect, the process is indecipherable to those who lack familiarity with modems, menus and convoluted network syntax.

"It's not like putting all of this

REACHING EDGAR

Computer users who want to gain access to Edgar data over the Internet can get further instructions for using the service two ways:

- Those who do not have an Internet account should use one of the on-line services (for example, America Online, Mercury Center or Compuserve) that allows you to exchange electronic mail with Internet addressees. Send an e-mail message to mail@town.hall.org that simply says "help." The request will automatically generate a return message with additional instructions.

- Those who have an Internet account should use one of the software navigational techniques for accessing information such as Gopher or Mosaic. Go to the host computer designated town.hall.org to find a menu with additional information about the service.

stuff in electronic media will make it more accessible to Mom and Pop," said Thomas Vos, vice president of Bowne & Co., an electronic publishing firm.

Even when potential users successfully navigate their way through SEC filings, they may be disappointed with their findings.

The service is more like an electronic filing cabinet that allows retrieval of a specific document, rather than a well-designed data base that facilitates searches of all documents for information fitting certain specifications.

Edgar reports also lack many of the helpful features of printed documents. Because Edgar is a text-based system, companies must omit charts, graphs, illustrations or photographs they routinely provide in printed documents. The SEC requires Edgar filers to include text that describes any charts, graphs or other illustrations.

For users who don't need very rapid access to a particular company filing, the best course may be to call the firm's investor relations department and ask for a copy.

The Executive Computer / Laurie Flynn

Need Timely S.E.C. Corporate Filings? Look on Internet

The world's most valuable financial data are available to desktop PC's.

EVEN as the Internet has become a place where businesses are afraid not to be represented, it is also quickly becoming one of the richest sources of the hard financial data on which businesses thrive.

Thanks to the National Science Foundation and the efforts of a few noisy consumer groups, the electronic filings of the Securities and Exchange Commission — arguably the world's most valuable collection of financial data — are now available to anyone with a PC and a modem.

For several years, the S.E.C. has been gradually converting to a computerized version of the various documents that it requires publicly traded companies to file. So far, this system, known as Edgar — an acronym for Electronic Data Gathering and Retrieval — contains filings from only a few thousand companies. But it is supposed to include all S.E.C.-regulated companies by 1996.

The S.E.C.'s Edgar documents are available for a fee through more than a dozen commercial online services, including Mead Data Central, Disclosure or Dow Jones.
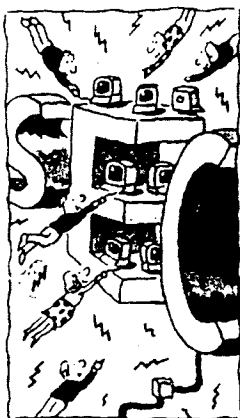
But since February, in a service that is called Edgar on the Internet,

the S.E.C.'s electronic documents are free for the taking. Free, that is, if you don't count your portion of the $60 million or so in Federal tax dollars that go to compiling S.E.C. data every year, or the $680 million National Science Foundation grant that is paying for the two-year Edgar on the Internet project

Still, when you consider the high prices charged by commercial information providers, Edgar on the Internet is a heck of a deal. And the project's full potential is still untapped, according to its gatekeepers — a "cyberstation" in Washington called the Internet Multicasting Service. The N.S.F. is paying the service to put the data on the Net each day. New York University's Stern School of Business is working with Internet Multicasting Service, packaging the raw Internet Edgar data so that it is easier for businesses and individuals to use

•

Like anything on the Internet, using Edgar can be a true navigational challenge. But there are several ways to wade in. The one you choose depends as much on the technology at your disposal as it does on just what you plan to do with the data once you've got it

One way is to send electronic mail requesting specific files. This works fine if all you need is the occasional document or two, but it is inefficient if you want to see a lot of material. The advantage to using E-mail is that you don't need an Internet account, virtually all the commercial online services have E-mail gateways that let

you send messages anywhere on the Internet

To retrieve files this way you first send a message to the Edgar system's server computer at the Internet Multicasting Service (the address is mail@town.hall.org). This message should request an index of Edgar documents and a list of the commands for retrieving them. After that you're ready to request specific files. The server automatically processes the requests and sends the documents back via E-mail usually

within a few hours.

The more efficient method, and more popular one among Net surfers, is to access Edgar directly over the Internet. This can be done using one of the many software navigational techniques for accessing information, such as Mosaic or World Wide Web, or by using one of the online services that provides Internet access, like America Online.

If you want to retrieve each daily update to the Edgar data bank — a technique known as "mirroring" — you're best off using an Internet file-transfer method known as FTP, for file transfer protocol. FTP allows a user to log on directly to the server computer containing the Edgar files

For people eager for fresh financial data, Edgar on the Internet has one huge drawback: the data from the S.E.C. is delayed by almost two days. That's because the Internet Multicasting Service is buying the S.E.C.'s daily feed of data on tape, via overnight mail, and then uploading it onto the Net that evening. If immediate access matters to you, you're better off subscribing to one of the commercial services with links to Edgar

There's another cloud hanging over Edgar on the Internet. The project finds itself in the middle of a fight between consumer advocates, who are scrambling to make sure it continues after its N.S.F. grant runs out in 1995, and the Securities and Exchange Commission, which holds the keys to the data.

In the consumer corner is the Taxpayers Assets Project, a Washington organization TAP, as the group is

known, contends that because the S.E.C. information is public it should be available for free, or nearly so, to anyone who wants it — perhaps directly through the S.E.C. itself

In the other corner is the S.E.C. It argues that precisely because Edgar on the Internet is free, the project is impeding development of a market for low-priced commercial services in which the vendors might earn a small profit in return for packaging the data in a form that is more usable and more secure than a raw Internet feed. "Putting it out on the Internet has slowed information services acquiring the feed and putting it up on their own services," said John Lane, chief information officer at the S.E.C.

"I would think there are some companies who care about security and reliability who wouldn't want to get Edgar files over the Internet," said Mr. Lane, who contends that the Internet's global vastness and lack of structure leaves users vulnerable to eavesdropping and intrusions. With private services like Mead's, he said, "You pay a fee, but what the fee pays for is a guaranty against hacking and viruses, and an assurance that what you need is going to be there."

•

As is typical among Internet true-believers, the folks over at the Internet Multicasting Service have little patience with arguments like Mr. Lane's. "Ours is much more secure" than many current commercial Edgar services, said Carl Malamud, president of Internet Multicasting. "Every one of our documents is stamped with a digital signature."

And for James P. Love, a TAP lawyer, the issue is not simply a technological one.

"Here's a project that's working, that vastly enhances the mission of the agency," he said of Edgar on Internet. "And the S.E.C.'s not interested."

Whatever the outcome of the debate, Internet Multicasting Services does not intend to become the permanent source of S.E.C. data over the Internet.

"I think the S.E.C. should do it," Mr. Malamud said. "In my view, they have an obligation to move their information onto the superhighway."

And Mr. Love of TAP argues that Edgar on the Internet is encouraging new uses of the S.E.C. data. Any

group with its own electronic bulletin board can "mirror" the Edgar database and redistribute the material in a format more suitable to a specific community of users

Investors Alliance, a personal-investment club in Fort Lauderdale, Fla., for example, downloads the 10 megabytes or so of new S.E.C. material posted daily on the Internet and makes it available to users of its electronic bulletin board system. This saves individual members of the alliance from having to seek out the data themselves. Some corporate users, including law firms, are similarly amassing the data and repackaging it to meet their specific needs

For those PC users who would just as soon avoid the sometimes-messy business of the Internet, but who can't justify the high cost of an institutional service like Mead's, there are other electronic ways to access S.E.C. documents. Compuserve is the oldest and largest of the general-purpose services and the one that offers the widest selection of financial data bases which Compuserve presents in a straightforward manner. S.E.C. data is offered through Compuserve's Disclosure data base

But even through Compuserve's Disclosure service the S.E.C. data doesn't come cheap. The monthly fee isn't nominal, but there are also charges based on the length of each online session. And in the Disclosure data base, each company profile is $5, while the full company report, including financial statements is $17 each

•

Another alternative comes from Mead itself. In April, the company introduced the Edgar Interactive Service, which provides weekly updates of all S.E.C. filings through an easy-to-use Windows interface. The price is $3,500 a month for unlimited use, and Mead plans to soon lower this fee.

As for the populist Edgar on the Internet, if early demand is any indication, the system's flaws don't appear to be scaring people off. Based on current usage, in the first year of the service users may retrieve nearly 500,000 documents — a strikingly high number, considering that all S.E.C. data won't be on Edgar until 1996.

The only question is whether the Internet version of Edgar will still be around by then. ∎

BUSINESS

International Herald Tribune, Saturday-Sunday, October 23-24, 1993

Your Company, On-Line

SEC Data to Come Free via Computer

By John Markoff

New York Times Service

SAN FRANCISCO — Showing the Clinton administration's willingness to offer broader public access to government information, the National Science Foundation is financing a project that will make corporate filings to the Securities and Exchange Commission available free via a computer network.

The project will provide access to the SEC's on-line data base of financial information from America's public corporations. The decision to support it is a shift away from the federal information policies under Presidents Ronald Reagan and George Bush. Those administrations favored letting private companies sell printed and electronic versions of government data.

Although the National Science Foundation project is a test, it has broad implications for creating fast, inexpensive consumer access to public records of all sorts. The precedent could threaten the huge industry that has grown up to sell financial records, court cases and other public documents over services like Mead Data Central's Nexis and Lexis networks.

"This is another indication of the administration's commitment to make federal information more available to the taxpayers who paid for it," said Michael Nelson, special assistant to the director of the White House Office of Science and Technology policy.

In June, the Office of Management and Budget announced that it was reversing previous administration policy that had defined government information as a commodity, often available for sale to private industry. The new policy encourages federal agencies to make as much information as possible available to the public with fees as low as possible.

The project will make disclo-

Previous administrations favored letting private companies sell official data.

sure of information from corporations accessible to anyone who has access to the Internet computer network through a modem or a direct network link. The Internet, a loose collection of computer networks that is administered by the National Science Foundation, is now routinely accessible from most university campuses and businesses.

Internet access is rapidly becoming a feature of many commercial on-line computer services as well. Some 20 million computer users are connected to the Internet.

"This is a wonderful example of how the Internet might be used to provide access to government information," said Marc

Rotenberg, national director of Computer Professionals for Social Responsibility, a Washington public interest group.

The project underscores how rapidly changing technologies are making it possible to offer low-cost access to government information that has previously been available only on paper in libraries or electronically on mainframe computers that were difficult and expensive to tap into from remote locations.

But increasingly, that mainframe data can be transferred easily to inexpensive work stations.

It also emphasizes the increasing scope of Internet as the forerunner of a national data highway that is expected to carry computer data, video and voice in the next century.

The project, financed with a $660,000 grant from the science foundation, is being undertaken by the Stern School of Business at New York University and a small Washington company, the Internet Multicasting Service.

Under the current system, a retail information provider, like Mead Data Central's Nexis service, charges about $15 for each SEC document, plus a connection charge of $39 an hour and a printing charge of about $1 a page.

The only fees to use the SEC's data base under the science foundation's project would be for access to the Internet, for which pricing varies. Commercial access can be bought for as little as $2 an hour.

Internet Users Get Access To S.E.C. Filings Fee-Free

By PETER H. LEWIS

In a two-year experiment that begins today, documents filed electronically to the Securities and Exchange Commission from public companies will be available to users of Internet, a global network of computer networks.

Documents obtainable on the service include annual reports, 10-K filings, proxy statements and other information valued by traders and investors. These documents are already available electronically through commercial data suppliers, including Mead Data Central Inc. of Dayton, Ohio, but the new Internet service is the first to make them available without additional charges.

The new service is the most ambitious experiment so far by the Clinton Administration to make much Government information widely available to the public at minimum cost. Although access to Internet itself can be costly, millions of people can tap into it through commercial, Government and educational computer networks. Once a computer user is connected to Internet, a giant global network that links millions of large and small computers so they can share information, there is typically no extra fee for document transfers.

Financed by Taxes

"We have a policy that Government information ought to be made available at only the marginal cost to provide the information," said Tom Kalil, who coordinates science and technology policy at the White House's National Economic Council. "We view this type of information dissemination as one of the ways we can address the info 'haves and have-nots' issue. Since taxpayers have already paid for it, the idea of making it available was appealing."

The cost of providing the S.E.C. data to Internet users is being underwritten by a National Science Foundation grant to the New York University Business School. In turn, the contract for operation of the computer data bases is with a not-for-profit company, the Internet Multicasting Service of Washington.

Coordination With S.E.C.

Carl Malamud, the principal of Internet Multicasting, said the S.E.C. is charging $78,000 a year to supply his company with data tapes of each day's filings. The fee, he said, basically covers the cost of the tapes and messenger fees. Mr. Malamud said the S.E.C. has projected that as many as 50 gigabytes of data — 50 billion characters of information — will be supplied each year. An average S.E.C. document contains about 3,000 characters, he said.

Mr. Malamud said that although they offered the same raw data, his Government-subsidized service is not in conflict with commercial information services like Mead Data. In return for its higher fees, Mead Data provides search software that makes it easier to find a particular document, and it guarantees its customers access to the data within minutes of the time the document is filed.

"Our data is 24 hours later than theirs, and we are not massaging the data to the extent that Mead is," Mr. Malamud said, although a goal of the experiment is to fashion easier search and retrieval mechanisms for the raw S.E.C. data.

Also, only 50 Internet users can gain access to the S.E.C. data base at one time, he said; cautioning that "if you were betting your business on getting a document right away, you shouldn't bet on us."

Computer users with access to Internet can get more information by sending an electronic-mail message to "mail[at]town.hall.org" requesting help. Those without Internet access can telephone (202) 628-2044.

Job hunting? Check today's Times.

SEC Database Now On Internet ●●●●●

Networks may set information free, but they also raise big questions about who is going to pay the travel bills. Such questions are now being debated in the corridors of Washington by politicians who would reinvent both the way our government distributes information and the companies who now make their livings from doing so. In October, information activists successfully lobbied the SEC to unleash onto the Internet EDGAR, the huge database of corporate financial information gathered by the Securities and Exchange Commission (SEC).

For better or worse – but hopefully for better – the SEC's EDGAR database will be an important test case for the future of government information. In 1989, understandably hoping to contract out as much data-processing grunt work

as possible, the SEC hired Mead Data Central to manage its huge database of corporate financial information. In return for keeping the records in electronic order, Mead received US$14 million over several years and privileged access to SEC information, which Mead then sold to the public through its Nexis database at $200 to $300 an hour.

Efficient though Mead undoubtedly is, it has no incentive to make SEC information widely and cheaply available. On the contrary, doing so would simply cut into its own business. So, to give taxpayers better access to the information they have paid to gather, Ed Markey, chairman of the House Telecommunications Committee, has controversially invoked the government's right to distribute magnetic tapes of SEC data in

●●●●●●●●●●●●●●● ●●●●●●●●●●●●●●

order to set up an alternative to Mead: Carl Malamud's Internet Multicasting Service.

With a $670,000 grant from the National Science Foundation, computers donated by Sun Microsystems, and network services from UUNET Technologies, Malamud must now prove that he can do at least as good a job as Mead of distributing the SEC data to investors and businesspeople – at no charge. Already he is brimming with ideas to create new services that take advantage of Internet connectivity. In addition to retrieving data directly, Malamud hopes to send out financial reports automatically in response to e-mail, and he is trying to create new technologies for "multicasting" – somewhat like broadcasting over networks – to enable groups to subscribe to financial data.

If Malamud's efforts succeed, they will set a vital precedent for freer government information. But technology isn't the only impediment to setting information loose. The Justice Department is being forced to shut down its own venture into the electronic publishing of legal information, a database system called JURIS, in a copyright dispute with West Publishing. Although the government owns the information in the reports of court cases and the like, West has copyrighted the format in which court cases are cited. West and the Justice Department have not agreed on terms for the government to use West's citations in the JURIS database. So JURIS will close at the end of 1993. It appears that the road to freer information will be long and twisty. For info, e-mail *edgar-announce@town.hall.org. – John Browning*